

# RECLAMATION

*Managing Water in the West*

## **Environmental Assessment**

**La Quinta Peninsular Bighorn Sheep Barrier Project**



**U.S. Department of the Interior  
Bureau of Reclamation  
Yuma Area Office  
Yuma, Arizona**

**February 26, 2018**

## **Mission Statements**

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultural and tribal communities, and supplies the energy to power our future.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# **Environmental Assessment**

## **La Quinta Peninsular Bighorn Sheep Barrier Project**

*Prepared by*

**United States Department of the Interior**

**Bureau of Reclamation**

**Yuma Area Office**

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## Acronyms and Abbreviations

APE	Area of Potential Effect
BLM	U.S. Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVWD	Coachella Valley Water District
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
ITAs	Indian Trust Assets
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
Reclamation	U.S. Bureau of Reclamation
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service



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# **1.0 Purpose of and Need for Proposed Action**

## **1.1 Introduction**

The Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) for the purpose of evaluating potential impacts associated with the proposed La Quinta Peninsular Bighorn Sheep Barrier Project. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 UCS 4321 et seq.), the Council on Environmental Quality regulations (40 CFR 1500-1508) for implementing NEPA, the Department of the Interior's NEPA Regulations (43 CFR Part 46), and Reclamation Manual NEPA Policy (ENV P03). Reclamation is the lead federal agency pursuant to NEPA.

## **1.2 Location**

The project area is located in the City of La Quinta in the Coachella Valley of Riverside County, California. It encompasses approximately 9.5 linear miles along the ridges and toe of slope of the Santa Rosa Mountains. The project planning area is located within portions of Sections 6, 7, 8, 17, 19, 20 and 29, Township 6 South, Range 7 East; and portions of Sections 13 and 24, Township 6 South, Range 6 East, San Bernardino Baseline and Meridian (SBB&M). The project area includes Reclamation land in the vicinity of the Coachella Canal and Lake Cahuilla. Bureau of Land Management (BLM) lands are also included in the vicinity of Lake Cahuilla County Park, mountainous portions of the planning area, and adjacent to the Quarry residential community. See Figures 1 and 2 for project location.

# CALIFORNIA

PACIFIC  
OCEAN

MEXICO



# RIVERSIDE COUNTY



**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Regional Location Map  
La Quinta, California**

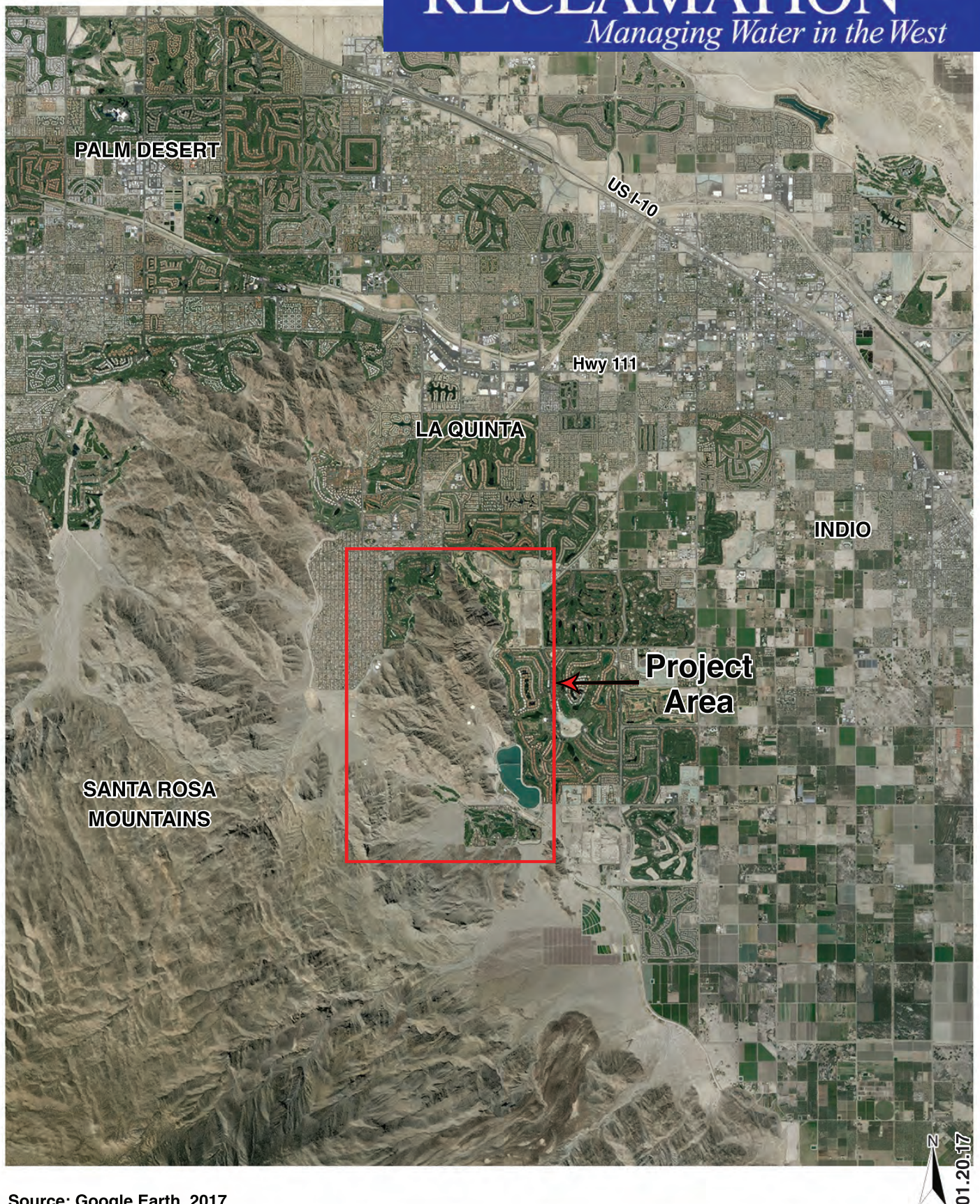
**Figure**

**1**



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Source: Google Earth, 2017



**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Project Vicinity Map  
La Quinta, California**

Figure

**2**



## 1.3 Background

### Peninsular Bighorn Sheep

The action described in this EA is a proposal to exclude Peninsular bighorn sheep (PBS; *Ovis canadensis nelsoni*), a federally endangered species, from urban areas in the City of La Quinta. PBS occupy and utilize portions of the Santa Rosa Mountains, including high elevation slopes and the margins between the slopes and valley floor that consist of rocky outcroppings, alluvial fans, and canyons. In the project area, urban development along the toe of slope has pushed PBS out of much of their former habitat, eliminating or restricting access to historic forage and bedding areas. PBS now visit lower elevation urban areas, including golf courses, residential yards, roadways, and the Coachella Canal, eating turf grass and other non-native landscape plants and drinking from swimming pools and other man-made water features.

PBS deaths and injuries have been documented in the project area associated with automobile collisions, poisoning from toxic landscape plants, drowning in the Coachella Canal, and other urban-related causes. Since 2012, nineteen PBS mortalities from urban-related causes have been documented in the project area: four drownings in the Coachella Canal, one oleander poisoning, one auto collision on Jefferson Street, one of undetermined causes, and twelve lamb deaths on adjoining golf and residential properties.<sup>1</sup> Recent lamb deaths may be associated with disease transmission, facilitated by unnaturally large concentrations of PBS on golf courses and in urban areas. These deaths are considered “take,” as defined by the federal Endangered Species Act. Other PBS-human conflicts have occurred, including PBS straying into traffic and urban development more than three miles from the Santa Rosa Mountains. Such incidents not only pose serious risks to PBS and public safety concerns, but also demand time, personnel, and financial resources for responding agencies. PBS injuries and fatalities are expected to continue to occur if the species is not restricted from these urban lands.

### CVWD PBS Exclusion Fence

Although owned by Reclamation, the Coachella Canal is operated and maintained by the Coachella Valley Water District (CVWD). In 2014, CVWD built a PBS exclusion fence in the project area as part of the Coachella Canal Realignment, SilverRock project. The project was part of the relocation and reconstruction of approximately 4,600 linear feet of the Coachella Canal to restore the canal’s original flow capacity that had been lost due to differential land subsidence. As part of the approved mitigation program, CVWD constructed an approximately 2,807-foot chain link fence along the toe-of-slope on the western side of the canal right-of-way to restrict PBS access to the canal. It extends between the southern portion of SilverRock and northern portion of PGA West, as shown on Figure 7. Reclamation determined that the project would have no significant environmental effect and approved it as a Categorical Exclusion.<sup>2</sup> The proposed action described in this EA will involve construction of a similar fence to limit PBS access to urban areas. Depending on the fence alignment selected, it may connect to

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<sup>1</sup> “Bighorn Institute Documentation of Urban Related Mortalities in La Quinta,” August 2012 through August 2015; comment letter from James R. DeForge, Bighorn Institute, March 28, 2016; Janine Colby, personal communication, California Department of Fish and Wildlife, 2017; Jenness McBride, personal communication, U.S. Fish and Wildlife Service, 2017.

<sup>2</sup> Bureau of Reclamation, Lower Colorado Region, Yuma Area Office, Categorical Exclusion No. YAO-CEC-14-013, April 10, 2014.



and serve as an extension of the existing CVWD fence and the recently constructed PBS exclusion fence along the toe-of-slope at SilverRock Resort.

### Federal Nexus

Some land within and immediately surrounding the project area is under federal ownership. Reclamation has ownership and management authority over the Coachella Canal, Lake Cahuilla, and surrounding land. The 123-mile Coachella Canal is part of the All-American Canal system and transports Colorado River water from the All-American Canal to its terminal reservoir, Lake Cahuilla. Water is regularly removed from Lake Cahuilla and delivered via subsurface pipelines to agricultural lands in the eastern Coachella Valley. Lake Cahuilla and the westernmost 2.5± mile extension of the canal are in the immediate project area. Responsibility for the care, operation, maintenance, and replacement of the Coachella Canal in the project area (including protective works, water delivery systems, and Lake Cahuilla) has been transferred by Reclamation to the Coachella Valley Water District. Reclamation also has a contract with Riverside County under which the County Parks and Open Space District is responsible for operation of a public park (Lake Cahuilla Recreation Area) surrounding Lake Cahuilla.

Depending on the alternative selected, construction of the proposed fence will require access to Reclamation lands associated with the Coachella Canal. Reclamation proposes to issue the Coachella Valley Conservation Commission (CVCC) a license granting them use of Reclamation land. If issued, the license would grant the project proponent, the CVCC, use of the land for implementing the La Quinta Peninsular Bighorn Sheep Barrier Project. It would be the responsibility of the proponent to adhere to guidance detailed in this EA concerning implementation. It would also be the responsibility of the proponent to provide funding, labor and materials to implement the plan.

The U.S. Bureau of Land Management (BLM) also owns and manages land in the project area, including portions of the Santa Rosa and San Jacinto Mountains National Monument and Santa Rosa Wilderness. In the event that project improvements are placed on lands under BLM management, the appropriate agreement for use of these lands shall be secured from the BLM for this purpose. The BLM is a *Cooperating Agency* under NEPA.

PBS was listed as an endangered species under the federal Endangered Species Act (ESA) in 1998. This protection covers bighorn sheep in the Peninsular Range which occur in nine ewe groups, or sub-populations, in Riverside, Imperial, and San Diego Counties. Portions of the project area are within or near critical habitat for the species, as designated by the U.S. Fish and Wildlife Service (USFWS).

In addition to full federal protection, the species is also covered under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP); the USFWS issued an incidental take permit to the CVMSHCP under section 10(a)(1)(B) of the Endangered Species Act in October 2008. Portions of the project area are within or immediately adjacent to the CVMSHCP San Jacinto and Santa Rosa Mountains Conservation Area. The CVMSHCP makes explicit provisions for management actions to protect PBS and enhance their chances for recovery. Specifically, Section 8.2.4.1, item 14, states:

*“If the USFWS or CDFG provides written notice to CVCC [Coachella Valley Conservation Commission] or Local Permittee that Peninsular bighorn sheep are using artificial sources of food or water in unfenced areas of existing urban development within*

*or near a Conservation Area, the CVCC (unless otherwise agreed to by the applicable Local Permittee) shall cause to be constructed a barrier to sheep access to cure the problem within 2 years of such notice. The location of this barrier (i.e., an 8-foot fence or functional equivalent) shall be determined by CVCC based on its ability to obtain permission/access to the necessary lands. If placement of a barrier must occur on other public lands (e.g., BLM [Bureau of Land Management], CDFG), CVCC will coordinate with these other agencies as appropriate.”*

In February 2014, the USFWS and California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) provided a letter to the City of La Quinta and CVCC notifying them that PBS were regularly accessing golf course and residential lands adjacent to a Conservation Area and that a barrier was needed to assure compliance with CVMSHCP Section 8.2.4.1.

Additionally, Reclamation’s Coachella Canal Area Resource Management Plan/Environmental Assessment (page 110) identifies general natural resource management mitigation measures.<sup>3</sup> Among these are “implement[ing] seasonal closures and fencing if necessary and install[ing] interpretive signs” to protect Peninsular bighorn sheep.

#### State Nexus

In addition to its status as a federally protected species, PBS is listed as a threatened species under the California Endangered Species Act (CESA). It is also a fully protected species under California Fish and Game Code 4700. Several state agencies with regulatory authority or responsibility to protect the species and its habitat are also signatories to the CVMSHCP. A separate Environmental Impact Report (EIR) has been prepared to analyze the potential environmental impacts associated with the proposed project in accordance with the California Environmental Quality Act (CEQA). The Coachella Valley Conservation Commission is the lead agency for the project under CEQA.

## **1.4 Purpose and Need**

As described in Section 1.3, PBS are known to visit and forage on urbanized lands in the project area, and urban-related injuries and fatalities of the species have occurred. The purpose of the proposed action is to safely prevent PBS access to urban land and facilities in the project area, which is expected to result in fewer PBS deaths, injuries, and accidents associated with urban activity, thereby contributing to species protection and recovery. The Project involves the construction of a permanent barrier that would prevent PBS from accessing these urban areas.

## **1.5 Determinations to be Made**

This EA will be distributed to appropriate decision-makers within Reclamation for review to determine whether a Finding of No Significant Impact (FONSI) is appropriate. A FONSI determination indicates

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<sup>3</sup> “Coachella Canal Area Resource Management Plan/Environmental Assessment: Boulder Canyon Project Act, All-American Canal System, Coachella Canal Unit, Riverside County, California,” U.S. Bureau of Reclamation, September 2006.

that all potential impacts are either not significant or can be reduced to not significant levels through implementation of mitigation measures. If a FONSI is appropriate, the decision would be made to issue a license to the CVCC. If any potential impacts are considered significant and cannot be avoided or reduced to not significant levels, an Environmental Impact Statement (EIS) is required.

## **2.0 Alternatives Considered**

This section describes alternatives considered for the proposed project, including the Proposed Action and No Action alternatives. Given that the subject action is closely related to and dependent upon the whole of the action, it is appropriate that the Proposed Action as a whole should be discussed in this impact analysis (Code of Federal Regulations, Title 40, Section 1508.25(a)).

### **2.1 No Action Alternative**

NEPA guidelines require that an EA evaluate the “No Action” alternative in addition to the Proposed Action. The No Action Alternative provides a basis for comparison of the environmental consequences of the Proposed Action. Under the No Action Alternative, no PBS exclusion fence would be built on Reclamation lands or BLM lands, or on other lands, and PBS would continue to have unrestricted access to urban areas in the project area, including federal and non-federal lands. If a fence is not built on federal and/or non-federal lands, unrestricted bighorn sheep access to surrounding golf courses and urban development will continue to expose PBS to the identified hazards of vehicular collisions, drowning in the canal and swimming pools, poisoning from toxic non-native plants, exposure to conditions that may promote harmful disease outbreaks, and the congregation of PBS to levels that facilitate the transmission of diseases. If no fence is built on either federal or non-federal lands, it is presumed that PBS would continue to be exposed to urban-related hazards and that additional “take” of the species would occur.

### **2.2 Proposed Action**

The proposed action consists of construction of a barrier along the toe-of-slope and the urban-mountain interface of the Santa Rosa Mountains that effectively restricts PBS access to urban land in the project area.

Three project alternatives, each of which can achieve project objectives, have been proposed and are analyzed herein: 1) Alternative A: Toe-of-Slope Alignment; 2) Alternative B: Ridgeline Alignment; and 3) Alternative C: Cove-to-Lake Alignment. The specific location and length of each barrier alignment varies, but barrier heights, styles, and materials would be similar for all of the alternative alignments.

Although the exhibits showing the various project alternatives are described and depicted as “lines on a map” it is anticipated that adjustments in the fence route will be necessary during construction to account for challenging topographical conditions in the project area, including extremely steep and rugged terrain. Portions of the fence route are also in proximity to golf courses and residences, and buffers between the proposed fence and urban development may be warranted to reduce visual impacts. Therefore, the project was analyzed using a corridor approach, which assumes flexibility in determining the final barrier alignment and an understanding that the barrier route may need to be moved up or downslope from the lines depicted on the exhibits. The evaluated corridor was approximately 300 feet in width to allow for the necessary flexibility in determining the final alignment of the proposed fence.

Regardless of which alignment is selected, the proposed project would consist of a chain link, welded steel, or wrought iron fence (or combination thereof) with a minimum 8-foot height; fence height may exceed 8 feet where adjacent steep slopes or other topographic features could allow PBS to jump over the fence. Gaps in fencing would be no larger than 4.3 inches, a maximum recommended in the PBS Recovery Plan.<sup>4</sup> Spaces at the bottom of the fence would be less than 2 inches high to discourage bighorn sheep from crawling under. In some locations, rocks or other substrate may be piled along the base of the fence to further minimize this possibility. Comparable fencing materials may be considered, as long as they meet the project objectives and dimensional and other functional requirements set forth in the Recovery Plan and CVMSHCP.

Pedestrian and/or vehicular gates would be provided at trailheads, vehicle roads, and other locations, as necessary, to facilitate emergency and/or recreational access. Pedestrian gates would be self-closing to minimize opportunities for PBS to pass through the fence. “Flapper” gates would be installed at the bottom of the fence where flooding and/or debris flow concerns exist to allow runoff and debris to be swept under the fence during storm events. Typical fencing elevations are shown in Figure 3 and examples of existing PBS fencing are shown in Figures 4 and 5.

Project construction would occur in phases or segments, and it is anticipated that the first phases would occur in the vicinity of PGA West, where PBS encroachment into urban areas has been most prevalent. Due to areas of limited accessibility and to minimize potential construction impacts, most of the work is expected to be completed by hand using lightweight machinery and hand tools. Two potential staging areas have been identified that could facilitate temporary storage of construction materials and helicopter operations, including helicopter pickup of materials and short-term landings. Where accessible, materials would be transported from staging areas to construction sites by hand and carts. In rougher terrain, it is anticipated that helicopter flights would be needed to ferry construction supplies to drop stations along the alignment. CVCC will be responsible for routine monitoring, inspections, and repairs over the lifetime of the project to assure that the fence and its gates remain intact and their effectiveness as a barrier is not compromised.

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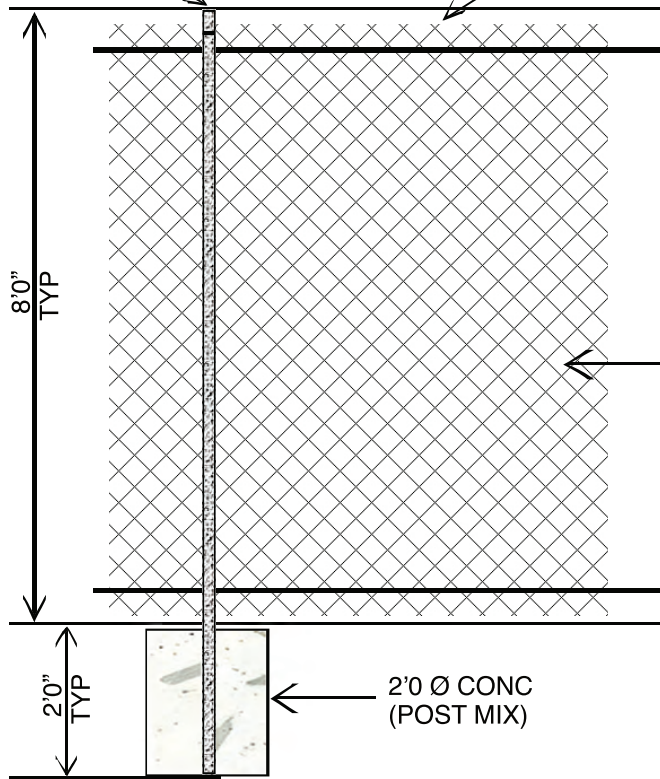
<sup>4</sup> Recovery Plan for the Bighorn Sheep of the Peninsular Ranges, California, U.S. Fish and Wildlife Service, 2000.

# RECLAMATION

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1 7/8" Ø x 10.0"  
LINE POST (TYP)  
@ 10.0' C/C MAX

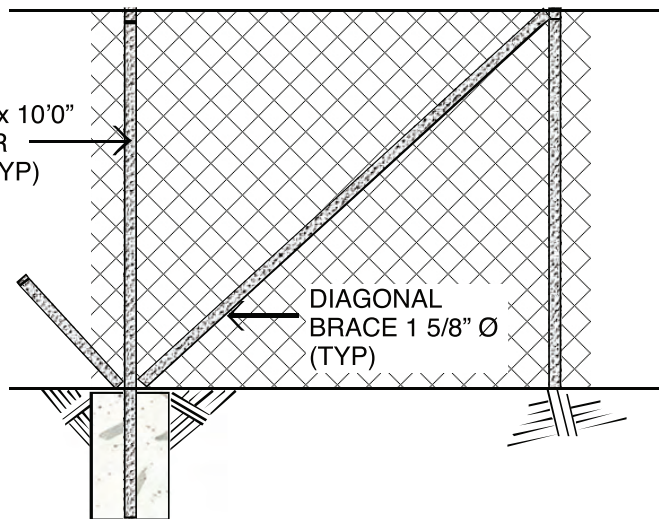
9 GA TENSION WIRES (T&B)  
w/ 9 GA TIES & HOG RINGS



11 GA FABRIC (TYP)  
(COLOR TO BE DECIDED  
BY CUSTOMER)

2'0 Ø CONC  
(POST MIX)

2 3/8" Ø x 10'0"  
CORNER  
POST (TYP)



DIAGONAL  
BRACE 1 5/8" Ø  
(TYP)

## TYP BRACING

REQ'D @ ALL CORNERS  
& @ 300'.0 MIN ON RUNS  
ALL DETAILS NOT SHOWN  
TYP PER DETAIL ABOVE

Source: Terra Nova Planning & Research, Inc. , 2016

01.19.17



**CVCC Peninsular Bighorn Sheep Barrier Project**  
**Environmental Assessment**  
**Chain Link Fence Elevations**  
**La Quinta, California**

Figure

3





Fence Type: Welded Steel



Fence Type: Tubular Steel



Fence Type: Chain Link



Fence Type: Chain Link & Flapper Gates

Source: CVAG; Coachella Valley Conservation Commission; Terra Nova Planning & Research, Inc., 2016



**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Representative Fence Types  
La Quinta, California**

01.20.17

Figure

4





01.20.17

Source: CVAG; Coachella Valley Conservation Commission; Terra Nova Planning & Research, Inc., 2016



**CVCC Peninsular Bighorn Sheep Barrier Project  
 Environmental Assessment  
 Representative Fence Photos  
 La Quinta, California**

**Figure**

**5**



## **2.2.1 Alternatives A and A2: Toe of Slope Alignment**

Alternative A: Toe-of-Slope Alignment extends 11.5± miles generally along the toe of slope of the Santa Rosa Mountains, from the southwesterly boundary of Tradition Golf Club to the southeasterly boundary of Quarry Golf Club. It connects to the existing 2,807± linear foot CVWD PBS exclusion fence west of the Coachella Canal. It also connects to the 6,321± linear foot fence along the toe of slope at the City of La Quinta's SilverRock golf course.

Some segments are upslope to avoid conflicts with adjoining land uses. Under Alternative A, 0.59± miles would be built on Reclamation lands and 2.27± miles on BLM lands. Alternative A would isolate approximately 130.35± acres of habitat that is currently accessible to bighorn sheep (see Figure 6).

To address concerns from PGA West, a modification to Alternative A was identified to avoid the immediate toe of slope adjacent to their golf course. This modification, referred to as Alternative A2, routes the fence over the ridge as shown in Figure 6. It eliminates approximately 5,391 linear feet of fencing immediately west of the Coachella Canal in the vicinity of PGA West, and replaces it with approximately 5,728 linear feet of fencing on the ridgeline to the west. Under Alternative A2, 0.48± miles of fencing would be built on Reclamation lands; no fencing would be built on BLM lands. Alternative A2 would isolate approximately 111.60 acres of PBS habitat, in addition to the 130.35± acres of habitat isolated elsewhere in the project area by Alternative A, for a total of 241.95± acres.

### **2.2.1.1 Construction Activities**

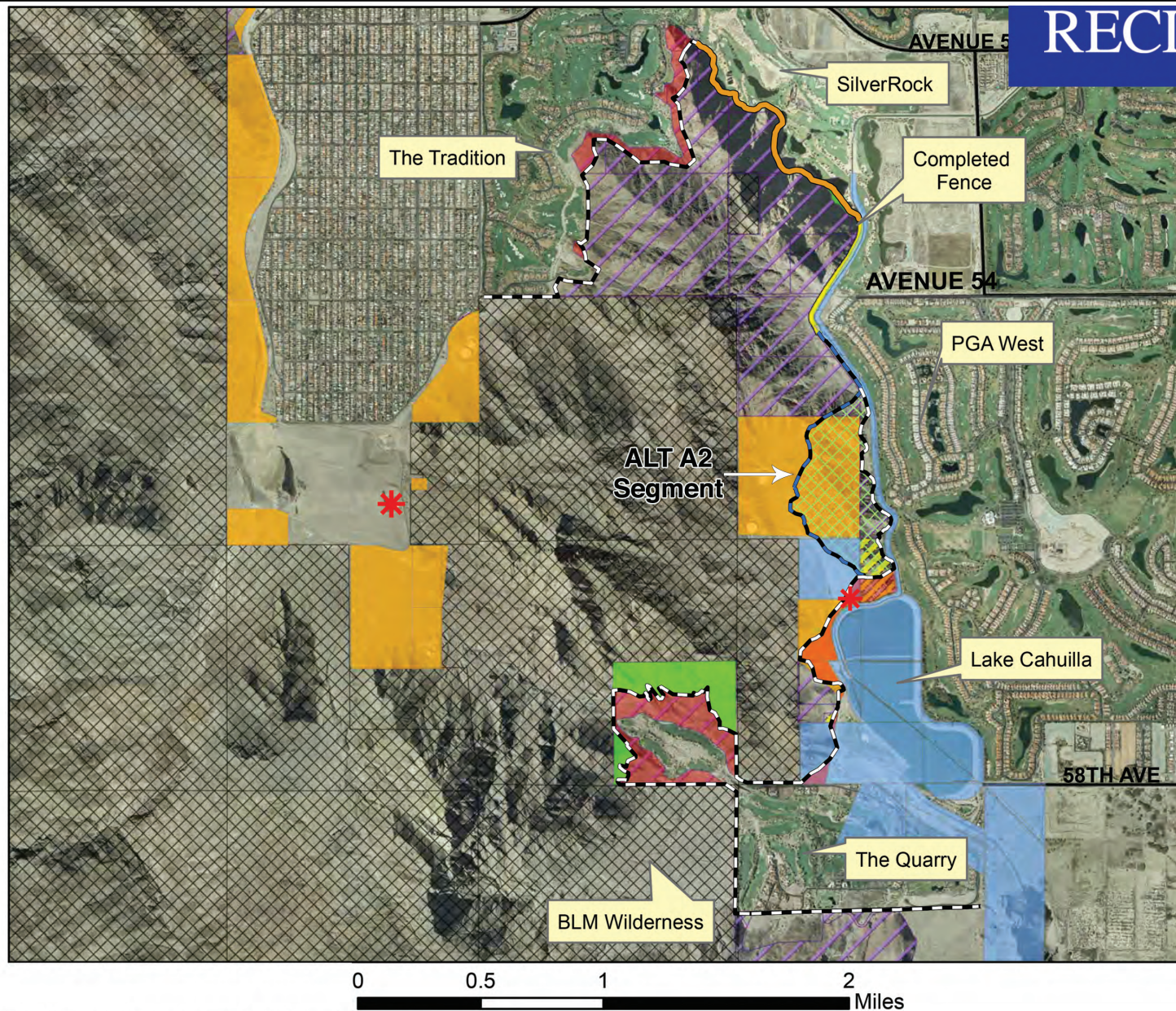
Construction of Alternative A would occur in several stages. That portion within the SilverRock Resort was constructed by the City of La Quinta in March 2017 on city-owned land. Other phases will depend on agreements with property owners.

Pre-construction work would involve field surveying and staking. Vehicles carrying fence supplies and personnel would use existing roads to access the general project area and park in designated staging areas. Construction materials and equipment would be transported to the fence line by foot and carts. Helicopter drops may be required to transport materials to remote locations or areas where rocky terrain, extreme slopes, or other limiting factors preclude the ground-based movement of materials. Construction materials could include chain link, welded steel, or wrought iron fence panels, posts and other supports, concrete mix, water (for post-mix concrete), and lightweight, mobile machinery and hand tools, such as augers, shovels, posthole diggers and drivers, tension equipment, drills, and pliers. Rock drills may be required to dig fence post holes where rock impedes standard digging; however, no large-scale blasting of bedrock is anticipated. Fence posts would be secured with a concrete mixture. Much of the work would be completed by hand.

### **2.2.1.2 Maintenance Activities**

CVCC will be responsible for project monitoring and maintenance over the lifetime of the project, including routine inspections to identify and assess any changes or damages to the fence or underlying soils that require repair or remediation, perhaps due to hydrological processes. Inspections would be accomplished on foot by designated personnel, and any repairs would be completed using similar tools and methods to those described in Section 2.2.1.1, above.





## Legend

- Alternative A (67,277 Linear Ft)
- Alternative A2 (7,234 Linear Ft)
- SilverRock Fence Built (6,321 Linear Ft)
- CVWD Fence Built (2,807 Linear Ft)
- PBS Habitat Affected AltA (130.35 Acres)
- AltA2 (111.60 acres)
- Bureau of Land Management
- Bureau of Reclamation
- City of La Quinta
- CVWD
- Private
- Riverside County
- Proposed Staging Area/Helipad

Source: Coachella Valley Conservation Commission, 2017



### CVCC Peninsular Bighorn Sheep Barrier Project Environmental Assessment Alternative A/A2 - Toe-of-Slope Alignment La Quinta, California

10.24.17

Figure

6



## **2.2.2 Alternatives B and B2: Ridgeline Alignment**

Alternative B: Ridgeline Alignment extends 7.7± miles along the urban-mountain interface. The southern portion of Alternative B is the same as Alternative A; however, the northern portion in the vicinity of Tradition Golf Club, SilverRock Resort, and PGA West generally follows higher elevations than Alternative A to provide an expanded buffer between the fence and nearby golf course and residences. Like Alternative A, Alternative B connects to, and serves as an extension of, the existing 2,807± linear foot CVWD PBS exclusion fence west of the Coachella Canal, and the recently constructed 6,321± foot PBS exclusion fence built at SilverRock. It would isolate approximately 422.62 acres of habitat that is currently accessible to PBS. Under Alternative B, approximately 0.51± miles of this alignment would be built on Reclamation lands and 1.58± miles on BLM lands. See Figure 7.

During meetings with the public and private landowners in the project area, concerns were expressed about impacts to private property from the proposed action. As a variation on Alternative B, consideration was given to an alignment that relies wholly, or in part, on the avoidance of privately owned lands. This “public lands only” alignment, referred to as Alternative B2, involves a fence route south of Alternative B and relies on lands owned by public agencies, including BLM, CVWD, and the City of La Quinta. The alignment increases the amount of PBS habitat that would be removed from PBS access to 742± acres. Under Alternative B2, approximately 0.67± miles of this alignment would be built on Reclamation lands and 2.37± miles on BLM lands. This alignment was analyzed in the event that agreements for access to private property to build the fence cannot be reached. See Figure 8.

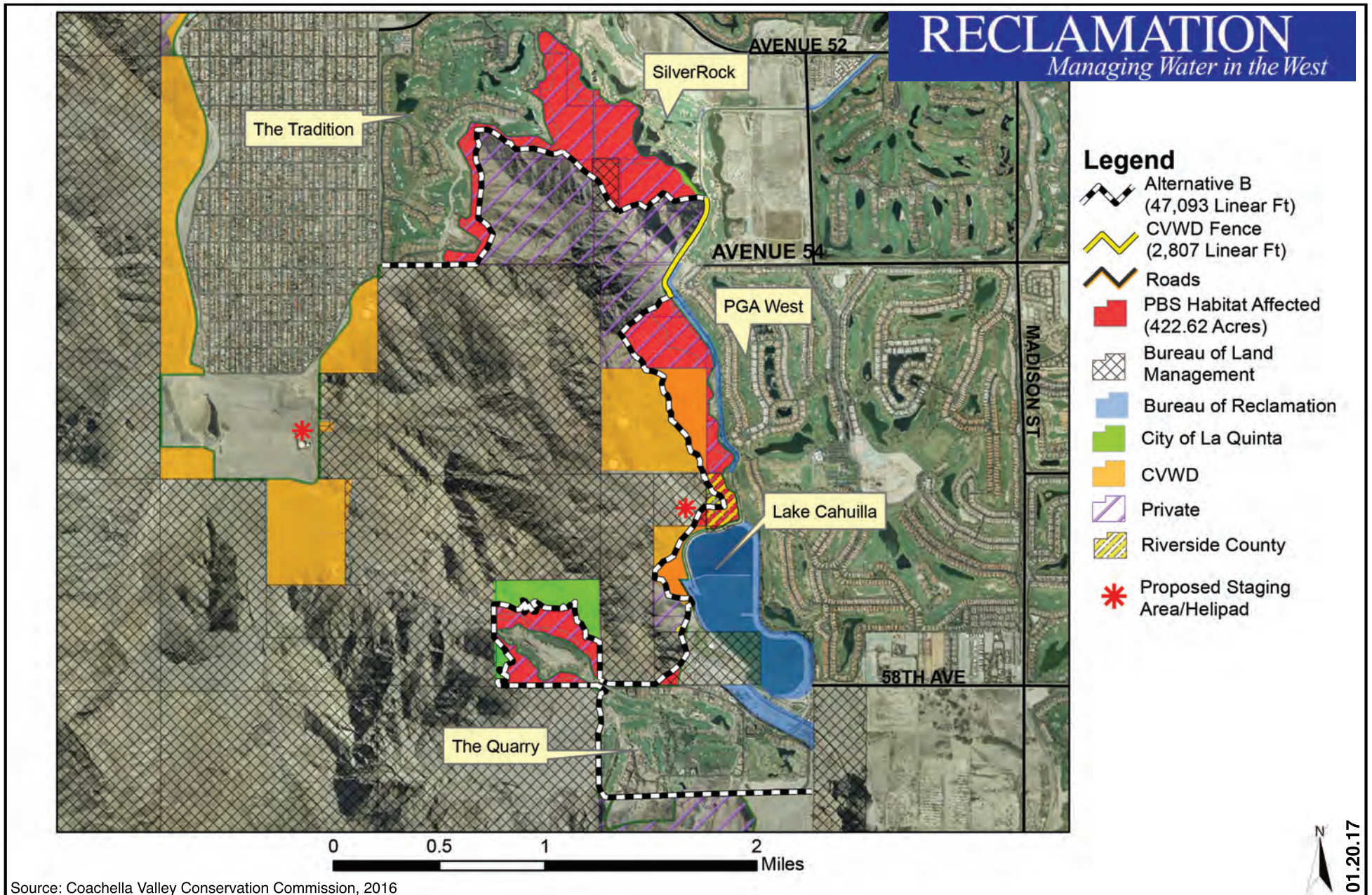
### **2.2.2.1 Construction Activities**

Construction methods for Alternative B would be the same as those described in Section 2.2.1.1. Construction would occur in phases.

### **2.2.2.2 Maintenance Activities**

Maintenance activities would be the same as those described in Section 2.2.1.2.



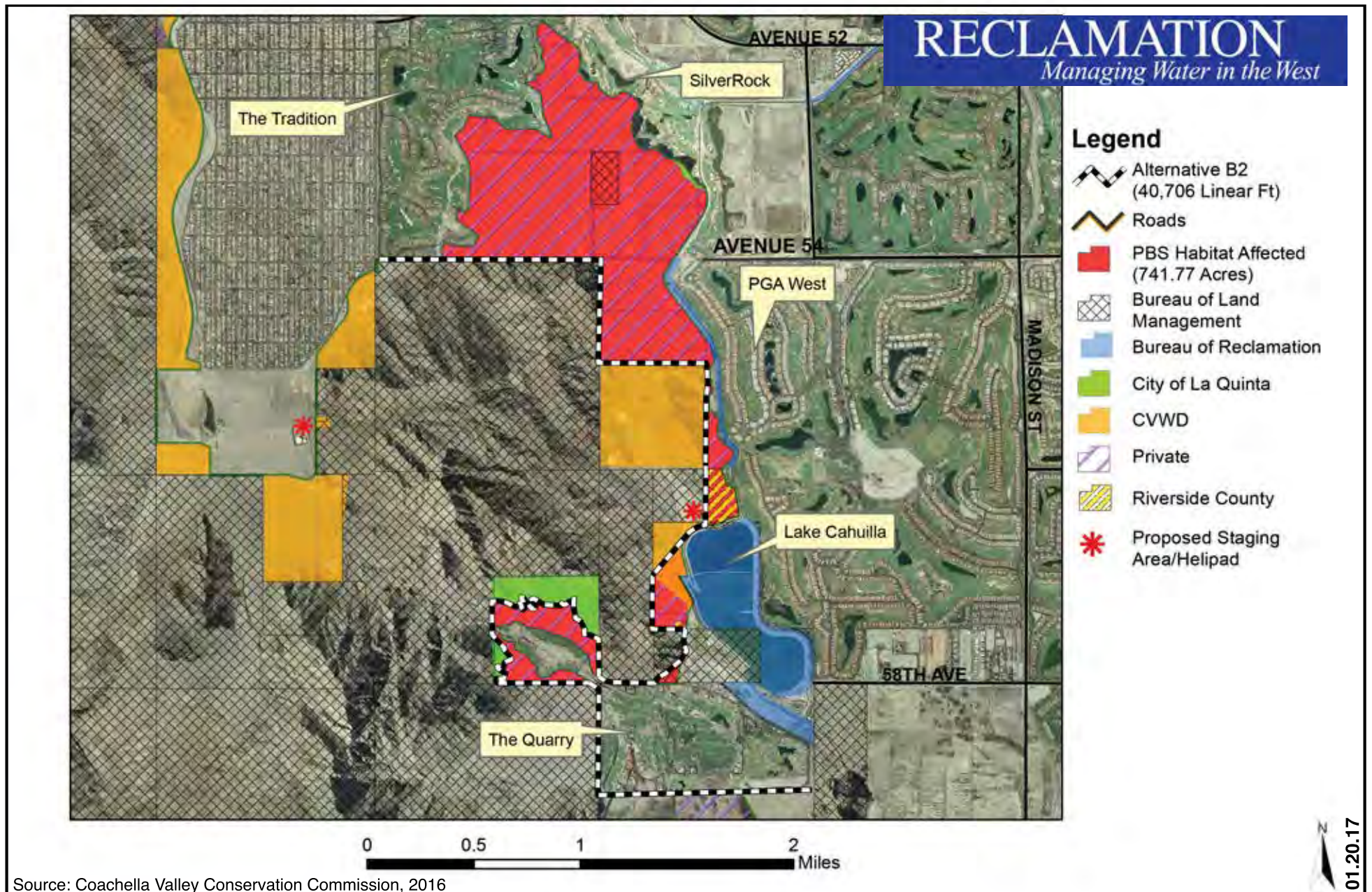


**CVCC Peninsular Bighorn Sheep Barrier Project**  
**Environmental Assessment**  
**Alternative B - Ridgeline Alignment**  
**La Quinta, California**

Figure

7





**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Alternative B2 - Ridgeline Alignment - Public Lands Only  
La Quinta, California**

01.20.17

Figure

8

### **2.2.3 Alternative C: Cove-to-Lake Alignment**

Alternative C: Cove-to-Lake Alignment extends 4.69± miles between the upper La Quinta Cove area and the southeasterly boundary of the Quarry Golf Club development. It generally extends from the boundary wall at the southwesterly portion of Tradition Golf Club, south along the toe-of-slope east of Avenida Bermudas, parallel to the existing Cove-to-Lake Trail, along the westernmost extension of the Quarry golf course, and along the westerly and southerly boundaries of the Quarry Golf Club. Alternative C would isolate 2,397± acres of habitat that is currently accessible to bighorn sheep. Under Alternative C, approximately 1.9± miles of this alignment would be built on Reclamation lands and 1.9± miles on BLM lands. See Figure 9.

#### **2.2.3.1 Construction Activities**

Construction methods would be the same as those described in Section 2.2.1.1. Construction would occur in several phases. The use of helicopters would be greatly reduced due to easier access points along this alignment.

#### **2.2.3.2 Maintenance Activities**











Maintenance activities would be the same as those described in Section 2.2.1.2.

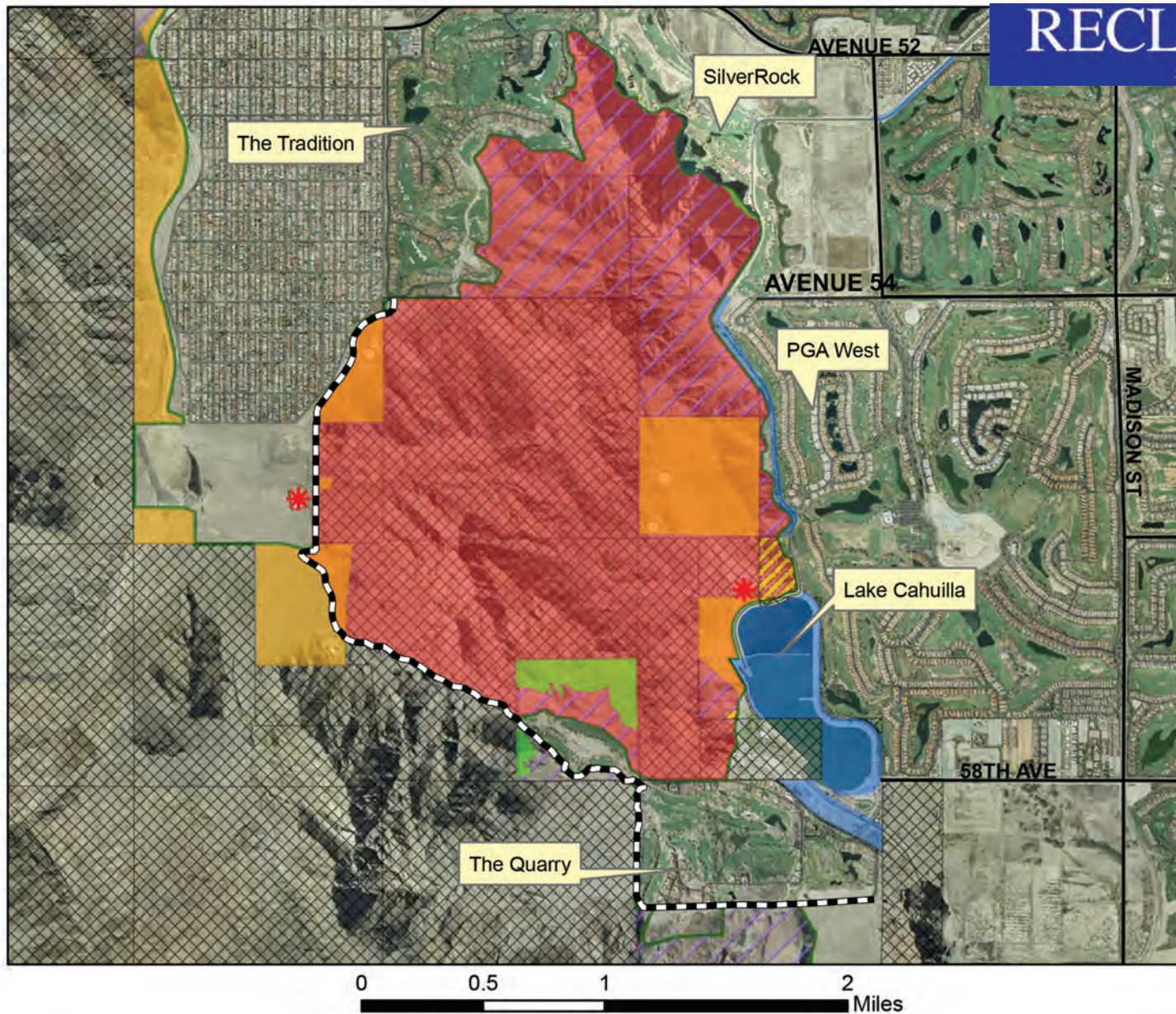


# RECLAMATION

*Managing Water in the West*

## Legend

-  Alternative C  
(24,773 Linear Ft)
-  Roads
-  PBS Habitat Affected  
(2,397 Acres)
-  Bureau of Land  
Management
-  Bureau of Reclamation
-  City of La Quinta
-  CVWD
-  Private
-  Riverside County
-  Proposed Staging  
Area/Helipad



Source: Coachella Valley Conservation Commission, 2016



**CVCC Peninsular Bighorn Sheep Barrier Project**  
**Environmental Assessment**  
**Alternative C - Cove-to-Lake Alignment**  
**La Quinta, California**

01.19.17

Figure

9



## **2.3 Actions Considered but Eliminated for Detailed Analysis**

The following project alternatives were considered but eliminated from further analysis for the reasons described.

### **2.3.1 Coyote Urine and Other Repellents**

A variety of repellents can be used to deter animals from accessing areas where an odor is present. Coyotes are natural PBS predators, and it is possible that the presence of coyote urine could discourage or deter PBS use of urban land in the project area. Coyote urine was applied at the SilverRock Resort golf course for this purpose several years ago; however, PBS behavior remained unchanged, and the method was determined to be ineffective.<sup>5</sup> This approach was not considered further due to a lack of demonstrated effectiveness, high costs associated with ongoing and labor-intensive applications, the vastness of the area that would need to be treated, potential conflicts with surrounding golfers and residents, and the potential for placing PBS at risk of increased predation in the event they become habituated to the smell.

### **2.3.2 Use of Shepherd Dogs**

Using dogs or humans to herd unwanted wildlife away from urban landscapes has been successful for animals such as deer and geese. However, when humans attempted to herd PBS away from the golf course at SilverRock Resort in the project area where PBS were regularly accessing hotel and residential lands, PBS quickly became habituated to their presence. Rather than seeking safety in the mountains, they avoided herders and scattered throughout the golf course.

Efforts have been made in the planning area and elsewhere with golf course personnel and others attempting to coax PBS away from urban landscapes and back into mountain habitat. This method was tried extensively in La Quinta and elsewhere in the Coachella Valley where PBS were entering hotel and residential lands, as well as highway parkways, to access vegetation and water. Bighorn sheep quickly realized that the human herders were not going to harm them and soon ignored and avoided them. Again at SilverRock Resort, staff has attempted over the years to herd the PBS off the golf course but they quickly habituated to the presence of staff, and did not seek safety in the mountains but scattered to remain on the golf course.<sup>6</sup>

Some effort has been made to gauge the effectiveness of herding dogs (border collies, Australian shepherds, etc.) in wildlife management. Historically, livestock protection dogs have been used to protect domestic sheep and goats from wildlife. Urban ungulate conflicts are a growing concern throughout the United States as urban encroachment becomes more prevalent with habitat loss.

In recent years, there has been a renewed interest in using dogs as an alternative to fencing or lethal means of excluding wildlife from chosen areas. A variety of studies have been done to test whether livestock protection dogs could be successful at keeping ungulates such as deer, elk, mountain goats and bighorn sheep away from golf courses, plantations and crops, livestock, and anthropogenic hazards such

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<sup>5</sup> Randy J. Duncan, General Manager, SilverRock Resort, June 6, 2016.

<sup>6</sup> Ibid.

as busy roads and parking lots. One study found livestock protection dogs were effective in reducing disease transmission to livestock from wild ungulates.

Livestock protection dogs, particularly certain breeds, were found to have potential for moving wildlife such as elk, bighorn and birds from areas where they were required to be excluded.<sup>7</sup> However, successful results were dependent on a few conditions. Livestock protection dogs were found to be more beneficial and less confrontational than other alternatives, particularly when accompanied by a human guide instead of a free-roaming situation, and with the identification of the correct breed and training.<sup>8</sup> In the summer of 2016, a dog patrol was introduced to Glacier National Park to keep bighorn sheep and mountain goats away from people and anthropogenic threats. An Australian shepherd is trained to not harass or haze the bighorn sheep and mountain goats, but only to herd them away. If the pilot program is found successful, the NPS will expand it to other areas to assist with wildlife management.

The effective use of herding dogs to haze deer has had some success but requires full time staff and trained border collies or the equivalent. Herding dogs are, at best, a temporary solution; in the long run and in the absence of 24/7 herding dog presence, PBS will become used to herding dogs and will learn how to avoid them, making herding dogs progressively less effective at keeping away ungulates.<sup>9</sup>

In the La Quinta situation, the length of the area along the toe-of slope that would need to be covered by livestock protection dogs would make this solution challenging. The use of shepherding dogs may be a viable solution to prevent PBS from habituating to use of urban areas if used at the first attempts by PBS to access these areas. It should also be noted that while federal law allows scaring or herding of depredating migratory birds without a permit (other than golden eagles (*Aquila chrysaetos*) and bald eagles (*Haliaeetus leucocephalus*) or threatened or endangered species), there are no such provisions for wild sheep. States generally require permits to haze ungulates with dogs. Due to these practical limitations associated with this approach, the use of herding dogs was not considered as a comprehensive and long-term solution to prevent PBS from accessing urban areas.

### 2.3.3 Vegetation Barrier

The use of a vegetation barrier, or hedge, instead of a structural fence was considered. However, further analysis concluded that such a barrier would be ineffective in preventing PBS from accessing urban land. Installing, growing, and maintaining a living fence to maturity, over a length of many miles, would be expensive and time and labor intensive. Irrigating a living fence would require large quantities of water and installation of water delivery infrastructure, and the barrier could become an attractive nuisance for PBS, coyotes, and other wildlife. Where the barrier crosses natural drainages, it could obstruct water and debris flows and disrupt hydraulic patterns in the project area. Finally, it is unclear whether such a barrier would be effective in containing PBS, given the species' ability to jump over and otherwise overcome a wide range of terrain and obstacles. For these reasons, the use of a vegetation barrier was not further considered.

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<sup>7</sup> Gehring, T. M., K. C. VerCauteren, and J. Landry. 2010. Livestock Protection Dogs in the 21st Century: Is an Ancient Tool Relevant to Modern Conservation Challenges? *BioScience* 60:299-308.

<sup>8</sup> VerCauteren, K.C., et al. "Cow Dogs: Use of Livestock Protection Dogs for Reducing Predation and Transmission of Pathogens from Wildlife to Cattle," National Wildlife Research Center, USDA. 2012.

<sup>9</sup> John D. Wehausen, Ph.D., personal communication.

### **2.3.4 Electrified Fencing**

Electrified fencing, including high-tensile woven steel, has been used for many years in the agricultural industry to restrain cattle, sheep, and goats. However, the height of such fences is typically less than eight feet, openings and gaps do not conform to prescribed dimensions required to effectively restrict PBS access, and large gaps between the fence and ground surface could allow them to crawl beneath. It is likely that an electrified fence would need to be custom made to serve the proposed action, and that special design considerations, such as closely spaced posts, would be required to adjust for uneven ground and rocky terrain. A fence that extends for several miles would require an extensive electrical charging system, and the effectiveness of the fence would be reduced when power is lost. It is reasonable to expect that an electrified fence would require more frequent inspections and more expensive repairs than a standard, non-electric fence. The presence of electrified fencing in close proximity to hiking trails, golf courses, and residences would also introduce potential safety hazards to humans in the project area. For these reasons, the use of electrified fencing in the project area was not considered further.

### **2.3.5 Relocation of Bighorn Sheep**

Species relocation involves the capture of animals in one location and transport of these animals to another location with suitable habitat, food, and water sources. This strategy works for some solitary species, such as bears, but is not expected to be an effective way to restrict PBS herds from urban land in the project area. Due to the limited availability of vegetation and water, Peninsular bighorn roam across broad expanses of habitat to get the food and water they need. Local PBS groups have distinct habitat use patterns and “cultures” that include knowledge of food, water, and lambing sites. Once they have become habituated to an area where food and water is available, they tend to return to these areas regardless of where they are relocated. Relocating PBS to a new habitat, in which they have no knowledge of local conditions, would increase risks to their health and safety. Relocating individual PBS does not remove the attractiveness of urban sources of food and water and other PBS in the vicinity would likely move into these areas.

It is also important to understand that with the extensive urban development that has occurred along the toe-of-slope and on alluvial fans in the Coachella Valley, which were once available and much used habitat for PBS, most of these areas are no longer available to them. In addition, PBS groups have multiple distinct habitat use patterns among females and between the sexes within what is typically defined as a bighorn sheep population. The local PBS group shares a “culture” that includes knowledge of where to find forage and water, and safe locations for lambing. Relocating PBS out of the area and into one where individual animals or the group have no knowledge of the local habitat would put the PBS at significant risk. Therefore, the relocation of PBS to other areas was not further evaluated.

### **2.3.6 Gates at Canal Crossings**

PBS have attempted to access or cross the Coachella Canal, which has proved lethal on several occasions. The installation of automatically closing gates at each of the Coachella Canal crossings within PGA West, which allow golfers to play on portions of the golf course between the canal and mountains, was considered as a barrier alternative. While this effort could prevent PBS access at locations where gates are installed, it would not prevent PBS from accessing golf course improvements located between the mountains and canal, and would not deter PBS from entering the canal where gates are not installed. Gates might encourage PBS to try to enter the canal to cross it, putting them at risk of injury or drowning. Gates could also interrupt the play of golf at the golf course, and could be considered a nuisance to golfers and maintenance personnel. Therefore, the use of gates at canal crossings was not considered for further analysis.

## **3.0 Affected Environment and Environmental Consequences**

### **3.1 Land Use**

#### **3.1.1 Affected Environment**

The project area is located in the City of La Quinta along and within the foothills and slopes of the Santa Rosa Mountains. Upslope land includes mountainous open space under a mix of private and public ownership, as well as the Boo Hoff/Cove-to-Lake Trail that extends from the La Quinta Cove to Lake Cahuilla Recreation Area. Downslope land includes golf courses, residential development, and resort facilities within master planned communities. It also includes the westernmost 2.5± miles of the Coachella Canal, Lake Cahuilla, and the Lake Cahuilla Recreation Area, which contains full-service and primitive campsites, a swimming pool, equestrian camp area and corrals. The Riverside County Sheriff's Department also maintains a shooting range north of the lake.

The proposed project alignments extend across private and public land, including land under the authority of Reclamation and BLM. The federal action would include the provision of a license from Reclamation and an access agreement from BLM to construct the subject fence on these federal lands, while permission to construct the balance of each alignment would be secured from the City of La Quinta, County Parks District, CVWD and private landowners. These lands occur within and adjacent to the CVMSHCP Santa Rosa and San Jacinto Mountains Conservation Area. The project is within an area covered by various plans, including the La Quinta General Plan, Santa Rosa and San Jacinto Mountains National Monument Management Plan, Coachella Valley Multiple Species Habitat Conservation Plan, USFWS Recovery Plan for Peninsular Bighorn Sheep, the Coachella Canal Area Resource Management Plan, and the BLM Coachella Valley California Desert Conservation Area (CVCDCA) Plan Amendment (2002).

#### **3.1.2 Environmental Consequences**

No Action – Under this alternative, no project would be built, and no land use changes would occur. Specific to federal lands, no license to construct a fence or other barrier would be issued by the USBR or BLM.

#### Proposed Action

Alternative A: Alternative A is consistent with and supports the intent of applicable land use policy documents, including habitat conservation plans and resource management plans. Section 8.2.4.1 (Management Action #14) of the CVMSHCP requires CVCC to cause construction of a PBS exclusion fence where PBS have been documented using artificial sources of food or water in unfenced areas of existing urban development within or near a Conservation Area. Such conditions have been documented in the project area, and Alternative A is consistent with this requirement. Task 1.2.1.1 of the Recovery Plan for PBS recommends constructing fences to exclude PBS from urban areas where they have begun or may begin using urban sources of food and water, and

provides guidance pertaining to appropriate and effective fence height, materials, and spacing. The Coachella Canal Area Resource Management Plan identifies fencing as an acceptable land management policy to protect high value wildlife habitat and PBS.

Portions of the fence could occur along the boundaries of the Santa Rosa Wilderness Area and within the Santa Rosa and San Jacinto Mountains National Monument, both of which are managed by BLM. Alternative A, in the portions proposed for construction on Reclamation and/or BLM lands will not result in changes to or conflicts with applicable land management policies or land use patterns. No change in land use or status would occur.

Alternative A2: Same as described for Alternative A, above.

Alternative B: Same as described for Alternative A, above.

Alternative B2: The land use consequences associated with implementation of Alternative B2 are essentially the same as those associated with Alternative A and B. In the northern portion of the planning area, fencing would occur along the boundary of BLM lands but less fencing would occur along Reclamation lands west of the Coachella Canal. Fencing along BLM lands in the southern planning area would be the same as with Alternatives A and B.

Alternative C: The land use consequences associated with implementation of Alternative C are essentially the same as those associated with the other build alternatives. No fencing would occur along Reclamation lands.

### **3.1.3 Management and Mitigation Measures**

No mitigation measures are proposed. Reclamation will coordinate with appropriate land management agencies prior to construction.

## **3.2 Air Quality and Climate Change**

### **3.2.1 Affected Environment**

The project area is located within the Salton Sea Air Basin (SSAB) and under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). A considerable amount of pollution in the SSAB is attributable to local geographic, geophysical, and climatic conditions.

In accordance with the Clean Air Act, as amended, the Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for a range of pollutants considered harmful to human health and the environment. The Coachella Valley exceeds state and federal PM<sub>10</sub> standards and is classified as a “serious” non-attainment area for PM<sub>10</sub>. It is also classified as attainment/unclassified

for PM<sub>2.5</sub>, based on state and federal standards, but does not require an Implementation Plan to demonstrate attainment. Historically, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) levels in the Coachella Valley have been elevated due to fugitive dust emissions associated with grading and construction activities, agricultural practices, and strong winds. SCAQMD and local governments employ a variety of measures to reduce particulate matter emissions throughout the region.

The Coachella Valley portion of the SSAB is also classified as a “severe-15” ozone non-attainment area for the 2008 8-hour state and federal ozone standard. The region must comply with federal ozone standards by December 31, 2027; with future emission controls, the Coachella Valley will achieve the 2008 8-hour federal standard by 2024.<sup>10</sup> Most ozone (O<sub>3</sub>) is transported to the SSAB from upwind sources in the South Coast Air Basin, which contains large metropolitan areas with high traffic volumes, heavy industry, and other large-scale emitters. The project area is designated as being in attainment for all other NAAQS.

#### Greenhouse Gases and Climate Change

For the purpose of this analysis the emissions of the following greenhouse gases are evaluated: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and carbon dioxide equivalent (CO<sub>2</sub>E), which includes a combination of hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

*Carbon Dioxide (CO<sub>2</sub>):* is an odorless and colorless gas that is emitted from natural sources such as the decomposition of dead organic matter, respiration of bacteria, plants, animals and fungus, evaporation from oceans, and volcanic out-gassing. Manmade sources of CO<sub>2</sub> include the combustion of coal, oil, natural gas, and wood. Carbon dioxide is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks.

*Methane (CH<sub>4</sub>):* is released naturally as part of biological processes such as in low oxygen environments like swamplands, bogs, or in rice production (at the roots of the plants) and in raising cattle. Mining of coal, the combustion of fossil fuels and biomass burning also generate methane emissions. Methane is a more efficient absorber of radiation compared to CO<sub>2</sub>; however its atmospheric concentration is less than carbon dioxide.

*Nitrous Oxide (N<sub>2</sub>O):* is more commonly known as laughing gas and is a colorless greenhouse gas that in small doses can cause dizziness, euphoria, and sometimes slight hallucinations.

*Carbon Dioxide Equivalent (CO<sub>2</sub>E):* is a term used to describe different greenhouse gases in a common unit. Such gases include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

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<sup>10</sup> “Final 2012 Air Quality Management Plan,” prepared by South Coast Air Quality Management District, December 2012.



### 3.2.2 Environmental Consequences

No Action – Under this alternative, no action would be taken to license construction of fencing on Reclamation and/or BLM lands. Neither would any construction occur on CVWD, County Park or private lands. Therefore, no change to current air quality conditions would occur.

#### Proposed Action

Alternative A: Construction and operational activities associated with Alternative A on Reclamation and/or BLM lands or on CVWD, County Parks or private lands would include vehicle and helicopter operation and ground disturbance that have the potential to release limited quantities of air pollutants, including carbon monoxide, nitrogen dioxides, reactive organic gases, sulfur dioxide, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). Potential emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 (see Appendix D) and Tables 1 and 2. No established emission thresholds would be exceeded. The project would be constructed in phases, which would further minimize air quality impacts in the project area.

**Table 1**  
**Alternative A**  
**Projected Construction Emissions (Lbs./Day)**

	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>ROG</b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
CalEEMod Outputs	12.21	17.56	1.53	0.02	4.30	1.14
Helicopter Emissions	<b>13.43</b>	<b>2.30</b>	<b>13.43</b>	<b>3.32</b>	<b>7.14</b>	<b>13.43</b>
<b>Project Total</b>	<b>25.64</b>	<b>19.86</b>	<b>14.96</b>	<b>3.34</b>	<b>11.44</b>	<b>14.57</b>
<b>SCAQMD Threshold</b>	<b>550.00</b>	<b>100.00</b>	<b>75.00</b>	<b>150.00</b>	<b>150.00</b>	<b>55.00</b>
<b>Exceeds Threshold</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: CalEEMod Version 2013.2.2. Value shown represents the average emissions from summer and winter.

Note: PM<sub>10</sub> and PM<sub>2.5</sub> emissions were derived using a 10/90 percent split of the helicopter emission projections.

As noted in Table 1, project construction will have a very limited and less than significant impact on area and regional air quality. Emissions associated with fence maintenance are negligible.

#### Greenhouse Gas Emissions

Construction activities will result in short-term GHG emissions associated with operation of construction equipment and employee commutes. GHG emissions from construction are temporary and will not substantially affect climate or interfere with a GHG reduction plan. All components of construction, including equipment, fuels, materials, and BMPs, will be subject to current regulations of GHGs. To determine if construction emissions will result in a cumulatively considerable impact, buildout GHG emissions were amortized over a 30-year period and added to annual operational emissions. Operational activities associated with Alternative A are limited to mobile



sources associated with routine fence maintenance. The following table summarizes the estimated GHG emissions from construction and operation associated with the entire Alternative A alignment as described in the Draft EIR, and not just on the portions proposed for licensing by Reclamation to be built on Reclamation lands.

**Table 2**  
**Alternative A**  
**GHG Emissions Summary (Metric Tons/Year)**

		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total CO <sub>2</sub> e
Construction	CalEEMod	267.51	0.08	0.00	269.15
	Helicopter <sup>1</sup>	---	---	---	1,330.72
	<b>Total</b>	---	---	---	<b>1,599.87</b>
Operation	CalEEMod	0.03	0.00	0.00	0.03
	Amortized	---	---	---	13.41
	<b>Total</b>	---	---	---	<b>13.44</b>

Source: CalEEMod Versions 2013.2.2. See Appendix D for detailed tables. Values shown represent the total unmitigated GHG emission projections for construction of the proposed Project.

<sup>1</sup> Note: Helicopter emissions 8,037.66 lbs per day, which equals 2,933,745.9 lbs per year, which equals 1,330.72 MT per year

Table 2, above, provides a conservative estimate of GHG emissions associated with construction of the Alternative A project, assuming daily (365 days) of construction and including 10 daily helicopter trips. Actual construction is expected to take less than the 260 annual construction days available. Therefore, project construction on Reclamation and BLM's licensed portion of Alternative A, as well as on involved non-federal lands, will have a very limited and less than significant impact on atmospheric greenhouse gases or climate change. Emissions associated with fence maintenance are negligible.

Alternative A2: Air quality and greenhouse gas impacts would be similar to those generated under Alternative A, above. No emission thresholds would be exceeded.

Alternative B: Air quality and greenhouse gas impacts would be similar to those generated under Alternative A, above. No emission thresholds would be exceeded.

Alternative B2: Air quality and greenhouse gas impacts would be similar to those generated under Alternative A, above. No emission thresholds would be exceeded.

Alternative C: Air quality impacts would be similar to but less than those generated under Alternative A or B, above, because the fence length is shorter and will result in less ground disturbance than Alternatives A and B or their variants. No emission thresholds would be exceeded.

### 3.2.3 Management and Mitigation Measures

No mitigation measures are proposed because air pollutant emissions would not exceed established thresholds.

## 3.3 Biological Resources

### 3.3.1 Affected Environment

The project area is located in one of the hottest and driest parts of the Sonoran Desert. The project area generally occurs along the mountain-urban interface where undeveloped natural open space and urban development come into contact. Land above the toe of slope consists of undeveloped mountainous and rocky terrain that is sparsely vegetated and includes several small, widely dispersed drainages that are typically dry except during brief, high-intensity storms. Land below the toe of slope includes landscaped golf courses and residential neighborhoods, and improvements associated with the Coachella Canal, Lake Cahuilla, and Lake Cahuilla Recreation Area. No riparian, wetland, vernal pools, or comparable habitat occurs in the project area.

#### Field Surveys

Biological resource field surveys were conducted for the proposed action along the eastern portions of Alternatives A, A2, B, B2, and portions of Alternative C on December 16 and 17, 2015 and February 19, 2016. All of the planning area was accessible, with the exception of the westernmost toe-of-slope areas within the Tradition Golf Club and the steepest portions of the intra-mountain area, which were not surveyed. Some portions of Alternatives A2, B, B2 and C (where they deviate from Alternative A) were not surveyed pending determination of the final alignment. Surveyed alignments were walked to record pertinent field data and current site conditions. Survey conditions were good to excellent. All findings are provided in Appendix B.2.

A focused burrowing owl (*Athene cunicularia hypugaea*) survey was conducted on the same portions of the project area described above on December 16 and 17, 2015. Survey results are provided in Appendix B.3.

#### Literature Review

A literature search was conducted to identify special-status biological resources within a 1-mile radius of the proposed action and included the sources listed below. Additional literature consulted during project analysis is listed below and in Section 5.0, References Cited.

- Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS, 2000)
- California Natural Diversity Data Base (CNDDB) RareFind 5 (CDFW, 2015a)
- Special Animals List (CDFW, 2015b)
- California Native Plant Society's (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (CNPS, 2015a)
- Coachella Valley Multiple Species Habitat Conservation Plan (CVAG, 2008)

- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS, 2015a), Web Soil Survey
- Coachella Valley Water District Biological Survey Report for the Coachella Canal Relocation Project (CVWD, 2013)
- United States Geological Survey 7.5' La Quinta, California quadrangle (USGS, 2015)
- City of La Quinta General Plan (City of La Quinta, 2015)
- National Wetlands Inventory (NWI)
- Assessing Climate-Related Changes in Water Resources in the Santa Rosa and San Jacinto Mountains National Monument, Technical report dated July 2014, prepared for the BLM and Coachella Valley Conservation Commission. Prepared by University of California Riverside Center for Conservation Biology, 2014
- Peninsular Bighorn Sheep, Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier in the La Quinta Area of the Coachella Valley”, John D. Wehausen, PhD. July 11, 2016
- Western Burrowing Owl Survey Report, Coachella Valley Conservation Commission. June 30, 2016
- Results of the 2016 Bighorn Sheep Helicopter Survey in the Peninsular Ranges of Southern California (draft), CDFW, December 22, 2016

#### Consultation with Recognized Experts

Numerous experts in the field of PBS biology and wildlife management were consulted throughout the project planning and analysis process. Dr. John D. Wehausen, an applied population ecologist with extensive experience in California bighorn sheep populations, analyzed the current conditions of the subject PBS population and potential impacts of the proposed action; his report is provided in Appendix B.1. Additional expertise was obtained from biologists and specialists at the USFWS, CDFW, BLM, and Bighorn Institute in Palm Desert, California; names and sources of information are listed in Section 5.0.

#### Biological Resources in the Project Area

The dominant vegetation community in the project area is Sonoran creosote bush scrub. Representative perennial plant species observed include: creosote bush (*Larrea tridentata*), burrobrush (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), allscale (*Atriplex polycarpa*), quailbush (*Atriplex lentiformis*), sweetbush (*Bebbia juncea* var. *aspera*), desert lavender (*Condea emoryi*) and scale broom (*Lepidospartum squamatum*). Representative annuals observed during on-site biological surveys were mostly dead or dormant and include desert trumpet (*Eriogonum inflatum*), brown-eyed primrose (*Chylismia claviformis*), and desert dicoria (*Dicoria canescens*).

Project-specific biological resource surveys observed and/or detected (through scat, bones, feathers, prints, burrows, etc.) at least fifty-seven (57) animal species, including two (2) fish, three (3) reptiles, at least forty-three (43) birds, and at least nine (9) mammals. Among these were the common chuckwalla, red-tailed hawk, greater roadrunner, loggerhead shrike, black-tailed jackrabbit, coyote, and white-tailed antelope squirrel.

### Special-Status Species in the Project Area

Special-status species are those with declining populations, vulnerability to habitat change, or restricted ranges. Some are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW) and are protected by the federal and/or state Endangered Species Acts. Others are identified as sensitive by the USFWS, CDFW, BLM, or private conservation organizations.

Forty-two (42) special-status plant and animal species, including Peninsular bighorn sheep, are known to occur within an approximate one-mile radius of the project alignments, including 18 plants, 1 vegetation community, 2 invertebrates, 4 reptiles, 12 birds, and 5 mammals. Tables 3 through 8 identify them and describe their sensitivity status and on-site occurrence potentials.

**Table 3: Special Status Plants**

Species	Status	Habitat	Probability
<i>Abronia villosa</i> var. <i>aurita</i> <b>chaparral sand-verbena</b>	F: None C: None CNPS: List 1B.1 Global Rank: G5T2T3 State Rank: S2 CVMSHCP: No BLM: Special Status	Sandy areas in chaparral and coastal sage scrub; 75-1600 m. B: Jan-Sept.	<b>Very Low</b> (habitat marginally suitable. <i>Abronia villosa</i> occurs in the La Quinta Cove but presence of this var. has not been documented)
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> <b>Borrego milk-vetch</b>	F: None C: None CNPS: List 4.3 Global Rank: G5T5? State Rank: S4 CVMSHCP: No	Mojave desert scrub, Sonoran desert scrub; 30 - 320 m. B: Feb–May.	<b>Very Low</b> (older record, not within 1 mile radius)
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> <b>Coachella Valley milkvetch</b>	F = <b>END</b> C = None CNPS: List 1B.2 Global Rank: G2 State Rank: S2 CVMSHCP: <b>Yes</b>	Sonoran desert scrub; sandy flats, washes, outwash fans, sometimes on dunes. 40 - 665 m. B: Jan –Sept.	<b>Very low</b> (Prefers sandy substrates; limited and marginally suitable)
<i>Astragalus preussii</i> var. <i>laxiflorus</i> <b>Lancaster milkvetch</b>	F: None C: None CNPS: List 1B.1 Global Rank: G4T2 State Rank: S1 CVMSHCP: No	Chenopod scrub; B: Mar-May	<b>Absent</b> (non-georeferenced records are from 1928 in area; known range outside this area)
<i>Astragalus tricarlinatus</i> <b>triple-ribbed milkvetch</b>	F: <b>END</b> C: None CNPS: List 1B.2 Global Rank: G2 State Rank: S2 CVMSHCP: <b>Yes</b>	Joshua tree woodland & Sonoran desert scrub on hot, rocky slopes in canyons and along edge of boulder-strewn desert washes, with <i>Larrea</i> and <i>Encelia</i> . 455-1525 m. B: February – May.	<b>Low-Moderate</b> CVMSHCP has modeled habitat. Found recently just outside of vicinity in Martinez and Agua Alta Canyons; will disperse from higher elevations in washes
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> <b>white-bracted spineflower</b>	F: None C: None CNPS: List 1B.2 Global Rank: G3T3 State Rank: S3 CVMSHCP: No BLM: Special Status	Mojavean desert scrub, pinyon and juniper woodland, sandy or gravelly. 300-1200 m. B: April – June.	<b>Very Low</b> (Alignment at edge of species known geographic and elevational range)

**Table 3: Special Status Plants**

Species	Status	Habitat	Probability
<i>Cryptantha costata</i> <b>ribbed cryptantha</b>	F: None C: None CNPS List: List 4.3 Global Rank: G4G5 State Rank: S4 CVMSCHP: No	Sandy Mojave desert scrub, sandy Sonoran desert scrub, dunes; -60-500 m. B: Feb–May	<b>Low</b> (Onsite sandy substrates extremely limited, dunes not present) Reported from vicinity of La Quinta Cove in 1962.
<i>Cryptantha holoptera</i> <b>winged cryptantha</b>	F: None C: None CNPS: List 4.3 Global Rank: G4G5 State Rank: S4 CVMSCHP: No	Mojave desert scrub, Sonoran desert scrub; 100- 1690 m. B: Mar–Apr.	<b>Low</b> (Found in vicinity of Lake Cahuilla in 1983))
<i>Ditaxis clariana</i> <b>glandular ditaxis</b>	F: None C: None CNPS: List 2B.2 Global Rank: G3G4 State Rank: S2 CVMSHCP: <b>No</b>	Sandy Sonoran Desert scrub and Mojavean desert scrub; 0-465 m. B: Oct-Mar.	<b>Moderate-High</b> (Known from immediate vicinity, however sandy substrates limited along alignment)
<i>Ditaxis serrata</i> var. <i>californica</i> <b>California ditaxis</b>	F: None C: None CNPS: List 3.2 Global Rank: G5T3T4 State Rank: S2? CVMSHCP: <b>No</b>	Sonoran Desert scrub; 30-1000 m. B: Mar-Dec.	<b>Moderate-High</b> (Species is common on alluvial fans, mountain slopes around La Quinta Cove) )
<i>Linanthus maculatus</i> <b>Little San Bernardino Mountains linanthus</b>	F: None C: None CNPS: List 1B.3 Global Rank: G2G3T1T2 State Rank: S2? CVMSHCP: <b>Yes</b> BLM: Special Status	Desert dunes, Sonoran & Mojavean desert scrub, Joshua tree woodland; most often on low benches along washes or bajadas where substrate shows evidence of water flow. From 195 - 2075 m. B: March – May.	<b>Absent</b> (Outside of known range.)
<i>Marina orcuttii</i> var. <i>orcuttii</i> <b>California marina</b>	F: None C: None CNPS List 1B.3 Global Rank: G2G3T1T2 State Rank: S2? CVMSHCP: <b>No</b>	Rocky chaparral, pinyon and juniper woodland, Sonoran desert scrub; 1050-1160 m; May-Oct.	<b>Absent</b> (Alignment below elevational range of species)
<i>Nemacaulis denudata</i> var. <i>gracilis</i> <b>slender cottonheads</b>	F: None  C: None  CNPS: List 2B.2 Global Rank: G3G4T3? State Rank: S2  CVMSHCP: <b>No</b>	Sandy places in coastal dunes, desert dunes, & Sonoran desert scrub. -50 to 400 m. B: Mar – May.	<b>Absent</b> (Alignment below elevational range of species. Dunes absent, onsite sandy substrates limited and marginal)
<i>Pseudorontium cyathiferum</i> <b>Deep Canyon snapdragon</b>	F: None C: None CNPS: List 2B.3 Global Rank: G4? State Rank: S1 CVMSHCP: <b>No</b>	Sonoran desert scrub in rocky washes and on rocky slopes. Restricted to the immediate vicinity of Deep Canyon; 0-800 m. B: Feb-Apr.	<b>Very Low</b> (Alignment just outside the eastern edge of this species very limited known distribution)

**Table 3: Special Status Plants**

Species	Status	Habitat	Probability
<i>Salvia greatae</i> <b>Orocopia sage</b>	F: None C: None CNPS: List 1B.3 Global Rank: G2G3 State Rank: S2S3 CVMSHCP: <b>Yes</b> BLM: Special Status	Mojave desert scrub, Sonoran desert scrub; -40- 825 m. B: Mar–Apr.	<b>Very low</b> (Perennial shrub not detected. Alignment is outside species known distribution)
<i>Selaginella eremophila</i> <b>desert spike-moss</b>	F: None C: None CNPS: List 2B.2 Global Rank: G4 State Rank: S2S3 CVMSHCP: <b>No</b>	Chaparral, Sonoran desert scrub; shaded sites, gravelly soils, crevices or among rocks. 200-900 m. B: May – July.	<b>Absent</b> (Alignment below elevational range of species)
<i>Stemodia durantifolia</i> <b>purple stemodia</b>	F: None C: None CNPS: List 2B.1 Global Rank: G5 State Rank: S2 CVMSHCP: No	Mesic sites on sandy soils in Sonoran Desert scrub; 180-299 m; Jan-Dec.	<b>Absent</b> (Requisite mesic habitat absent. Alignment below elevational range of species)
<i>Xylorhiza cognata</i> <b>Mecca aster</b>	F: None C: None CNPS: List 1B.2 Global Rank: G2 State Rank: S2 CVMSHCP: <b>Yes</b> BLM: Special Status	Grows on steep canyon slopes on sandstone and clay substrates; 20-305 m; B: Jan-Jun	<b>Absent</b> (Requisite sandstone and clay substrates absent)

**Table 4: Special Status Vegetation Communities**

Community	Status	Habitat	Probability
<b>desert fan palm oasis woodland</b>	F: None C: None Global Rank: G3 State Rank: S3.2 CVMSHCP: <b>Yes</b>	Natural <i>Washingtonia filifera</i> groves	<b>Absent</b> (Although palms intermittently present [most likely planted], oases and/or woodlands are absent)

**Table 5: Special Status Invertebrates**

Species	Status	Habitat	Probability
<i>Macrobaenetes valgum</i> <b>Coachella giant sand treader cricket</b>	F: None C: None Global Rank: G1G2 State Rank: S1S2 CVMSHCP: <b>Yes</b>	Active sand dune hummocks and ridges, sites favorable to permanent habitation include spring-moistened sand.	<b>Absent</b> (Dune, hummocks and moist sands absent)
<i>Stenopelmatus cahuilaensis</i> <b>Coachella Valley Jerusalem cricket</b>	F: None C: None Global Rank: G1G2 State Rank: S1S2 CVMSHCP: <b>Yes</b>	Wind-deposited (aeolian) sand dunes, drift sands and water deposited (alluvial) gravelly/sandy soils	<b>Absent</b> (Extensive sandy substrates lacking. Alignment is outside known distribution)

**Table 6: Special Status Amphibians & Reptiles**

Species	Status	Habitat	Probability
<i>Crotalus ruber ruber</i> <b>northern red-diamond rattlesnake</b>	F: None C: <b>SSC</b> Global Rank: G4 State Rank: S3 CVMSHCP: No	Chaparral, woodland, grassland, desert in rocky areas & dense vegetation, Needs burrows, rock cracks, or surface cover objects.	<b>Moderate</b> (Although habitat suitable, alignment is at eastern edge of species distribution. Known from vicinity)
<i>Gopherus agassizi</i> <b>desert tortoise</b>	F: <b>THR</b> C: <b>THR</b> Global Rank: G3 State Rank: S2 CVMSHCP: <b>Yes</b>	Creosote bush scrub, Joshua tree woodland, saltbush scrub); washes, arroyos, bajadas, rocky hillsides, open flat desert.	<b>Low – Moderate</b> (Habitat intermittently suitable, however very low tortoise densities in vicinity)
<i>Phrynosoma mcallii</i> <b>flat-tailed horned lizard</b>	F: None C: <b>CAN, SSC</b> Global Rank: G3 State Rank: S2 CVMSHCP: <b>Yes</b> BLM: Special Status	Restricted to desert washes and desert flats; requires vegetative cover, ants, and fine sand.	<b>Low</b> (Suitable habitat along alignment intermittent and limited)
<i>Uma inornata</i> <b>Coachella Valley fringe-toed lizard</b>	F: <b>THR</b> C: <b>END</b> Global Rank: G1Q State Rank: S1 CVMSHCP: <b>Yes</b>	Requires fine, loose, windblown sand interspersed with hardpan and widely spaced desert shrubs.	<b>Absent</b> (Aeolian sands lacking)

**Table 7: Special Status Birds**

Species	Status	Habitat	Probability
<i>Athene cunicularia</i> <b>burrowing owl</b>	F: <b>MBTA, BCC</b> C: <b>SSC</b> (burrows) Global Rank: G4 State Rank: S3 CVMSHCP: <b>Yes*</b> BLM: Special Status	Open, dry annual or perennial grassland, deserts & scrublands characterized by low-growing vegetation. Burrow sites essential.	<b>Nesting: Low -Moderate</b> (Suitable habitat limited. Modeled habitat for nesting and migration, Very few potential shelter opportunities observed. No sign detected) <b>Foraging: Low</b> (Same as above)
<i>Empidonax traillii extimus</i> <b>southwestern willow flycatcher</b>	F: <b>END</b> C: <b>END</b> Global Rank: G5T2 State Rank: S1 CVMSHCP: <b>Yes</b>	Nests in large areas of riparian forests and woodlands	<b>Nesting: Absent</b> (Riparian habitat lacking) <b>Foraging: Low - Moderate</b> (Migration only)
<i>Falco mexicanus</i> <b>prairie falcon</b>	F = <b>MBTA, BCC</b> Global = G5 State = S3 C = <b>SSC</b> (nesting) CVMSHCP = No	Breeding sites located on cliffs, but forages far afield.	<b>Nesting: Moderate</b> (Steep cliffs immediately adjacent to site provide suitable nesting habitat) <b>Foraging: High</b> (Even if the species does not nest on the steep cliffs immediately adjacent to the site, this species nests in the vicinity and is known to forage widely over the Coachella Valley)



**Table 7: Special Status Birds**

Species	Status	Habitat	Probability
<i>Lanius ludovicianus</i> <b>loggerhead shrike</b>	F: <b>MBTA</b> , BCC C: <b>SSC</b> (nesting)  Global Rank: G4 State Rank: S4  CVMSHCP: No	Breeds mainly in shrublands or open woodlands with some grass cover & areas of bare ground. Requires tall plants or structures for hunting & vocalization perches and open areas of short grasses, forbs, or bare ground for hunting.	<b>Nesting: High</b> (Suitable habitat present)  <b>Foraging: Occurs</b> (Observed)
<i>Poliophtila melanura</i> <b>black-tailed gnatcatcher</b>	F: <b>MBTA</b> C: None Global Rank: G5 State Rank: S3S4 CVMSHCP: No	Primarily inhabits wooded desert wash habitats, desert scrub habitat, esp. in winter; nests in desert washes containing mesquite, palo verde, ironwood, acacia, absent from areas where salt cedar introduced	<b>Nesting: High</b> (Suitable habitat present)  <b>Foraging: Occurs</b> (Observed)
<i>Pyrocephalus rubinus</i> <b>vermillion flycatcher</b>	F: <b>MBTA</b> C: <b>SSC</b> (nesting) Global Rank: G5 State Rank: S2S3 MSHCP: No	Usually associated with desert riparian habitats, sometimes in landscaped vegetation.	<b>Nesting: Low-Moderate</b> (Suitable habitat present in golf course landscaping)  <b>Foraging: Occurs</b> (Observed)
<i>Toxostoma crissale</i> <b>crissal thrasher</b>	F: <b>MBTA</b> , BCC C: <b>SSC</b> Global Rank: G5 State Rank: S3 CVMSHCP: <b>Yes</b>	Resident of southeastern deserts in desert riparian and desert wash habitats; nests in dense vegetation along streams/washes; honey mesquite, screwbean mesquite, ironwood, catclaw acacia, arrowweed	<b>Nesting: Low</b> (Suitable habitat present in golf course; known from vicinity (2016 Tradition).)  <b>Foraging: Low</b> (Suitable nesting habitat may occur nearby)
<i>Toxostoma lecontei</i> <b>Le Conte's thrasher</b>	F: <b>MBTA</b> , BLM Sensitive, BCC C: <b>SSC</b> (San Joaquin population only) Global Rank: G4 State Rank: S3 CVMSHCP: <b>Yes</b>	Desert resident, primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats; commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground	<b>Nesting: Moderate</b> (Suitable habitat intermittently present. Alignment is within CVMSHCP Modeled Habitat).  <b>Foraging: Moderate-High</b> (Same as above)
<i>Vireo bellii pusillus</i> <b>least Bell's vireo</b>	F: <b>END</b>  C: <b>END</b>  Global Rank: G5T2 State Rank: S2  CVMSHCP: <b>Yes</b>	Riparian vegetation in the vicinity of water or in dry river bottoms; below 2000 feet elevation. Nests usually in willow, <i>Baccharis</i> , or mesquite.	<b>Nesting: Absent</b> (Requisite riparian habitat lacking) <b>Foraging: Low</b> (Migration only)
<i>Piranga rubra</i> <b>summer tanager</b>	F: <b>MBTA</b> C: <b>SSC</b> (nesting) Global Rank: G5 State Rank: S1 CVMSHCP: <b>Yes</b>	Mature riparian forest and woodland; in s. Calif. known to nest at Morongo Valley, Victorville, Kern River, Colorado River.	<b>Nesting: Absent</b> (Requisite riparian habitat lacking. Alignment within CVMSHCP Modeled Habitat however). <b>Foraging: Very low</b> (Same as above)



**Table 7: Special Status Birds**

Species	Status	Habitat	Probability
<i>Icteria virens</i> <b>yellow-breasted chat</b>	F: <b>MBTA</b> C: <b>SSC</b> (nesting) Global Rank: G5 State Rank: S3 CVMSHCP = <b>Yes</b>	Riparian forest and woodland; nests along many river systems in southern CA	<b>Nesting: Absent</b> (Requisite riparian habitat lacking) <b>Foraging: Very Low</b> (Migration only)
<i>Dendroica petechia</i> <b>yellow warbler</b>	F: <b>MBTA</b> C: <b>SSC</b> (nesting) Global Rank: G5 State Rank: S3S4 CVMSHCP: <b>Yes</b>	riparian forest and woodland; nests along Mojave River, Santa Ana River, Kern River, and many others in s. Calif.	<b>Nesting: Absent</b> (requisite riparian habitat lacking) <b>Foraging: Very Low</b> (Migration only)

**Table 8: Special Status Mammals**

Species	Status	Habitat	Probability
<i>Lasiurus (ega) xanthinus</i> <b>western (southern) yellow bat</b>	F: None C: <b>SSC</b> Global: Rank: G5 State Rank: S3 WBWG: H CVMSHCP : <b>Yes</b>	Valley foothill riparian, desert riparian, desert wash and palm oasis habitats; roosts in trees, particularly palms, forages over water and among trees.	<b>Roosting: High</b> (Palms with dense aprons and other trees present) <b>Foraging: High</b> (Open waters present at Lake Cahuilla, water hazards and canal)
<i>Nyctinomops femorosaccus</i> <b>pocketed free-tailed bat</b>	F: None C: <b>SSC</b> Global Rank: G4 State Rank: S3 WBWG: M CVMSHCP: No	Roosts in crevices on rugged cliffs, on high rocky outcrops and slopes. May also roost in buildings, caves, and under roof tiles.	<b>Roosting: High</b> (Suitable habitat within steep, rocky slopes of Santa Rosa Mtns.) <b>Foraging: High</b> (Same as above)
<i>Perognathus longimembris bangsi</i> <b>Palm Springs pocket mouse</b>	F: None C: <b>SSC</b> Rank: G5T2T3 State Rank: S2S3 CVMSHCP: <b>Yes</b> BLM: Special Status	Desert riparian, desert scrub, desert wash & sagebrush habitats. Most common in creosote dominated desert scrub. Occurs in all canopy coverage classes. Rarely found on rocky sites.	<b>–Low-Moderate</b> (Habitat suitable, CVMSHCP Modeled habitat present along portions of alignment)
<i>Xerospermophilus tereticaudus chlorus</i> <b>Coachella Valley (Palm Springs) round-tailed ground squirrel</b>	F: None C: <b>SSC</b> Global Rank: G5T2Q State Rank: S1S2 CVMSHCP: <b>Yes</b> BLM: Special Status	Prefers open, flat, grassy areas in fine-textured, sandy soil in desert succulent scrub, desert wash, desert scrub, alkali scrub, & levees.	<b>Low - Moderate</b> (Suitable habitat intermittent. CVMSHCP Modeled habitat present along alignment)
<i>Ovis canadensis nelsoni</i> pop. 2 <b>Peninsular bighorn sheep DPS</b>	F: <b>END</b> C: <b>THR</b> Global Rank: G4T3Q State Rank: S1 CVMSHCP: <b>Yes</b>	Desert rocky slopes of the Peninsular Ranges in San Diego, Riverside, and Imperial Counties	<b>Occurs</b> (Observed. Designated critical habitat present along alignment)

**Definitions of status designations and occurrence probabilities for above tables.**

**Definitions of occurrence probability:**

**Occurs:** Observed in the PPA/APE by Amec Foster Wheeler personnel or recently reported in the PPA/APE by another reliable source.

**High:** Observed in similar habitat in region by qualified biologists, or habitat on the PPA/APE is a type often utilized by the species and the PPA/APE is within the known range of the species.

**Moderate:** Reported sightings in surrounding region, or PPA/APE is within the known range of the species and habitat on the PPA/APE is a type occasionally used by the species.

**Low:**PPA/APE is within the known range of the species but habitat on the PPA/APE is rarely used by the species

**Very Low:**Habitat is of marginal suitability and/or PPA/APE is at the edge of species known range or distribution.

**Absent:**A focused study failed to detect the species, suitable habitat not present, or PPA/APE is outside the geographic distribution of the species.

**Unknown:**No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.

#### **CVMSHCP designations**

**Yes: Conserved by the plan**

No: Not specifically conserved by the plan

C: Considered, but not included in the plan

**Federal designations:** (F = federal Endangered Species Act or USFWS designations)

**END: Federally listed, Endangered**

**THR: Federally listed, Threatened**

**CAN: Candidate for Federal listing**

**BLM: Special Status species**

MBTA: Migratory Bird Treaty Act

BEPA: Bald Eagle Protection Act (also protects Golden Eagles)

BCC: Birds of Conservation Concern

None: No designation

**State designations:** (C = California Endangered Species Act or CDFG designations)

**END: State listed, Endangered**

**THR: State listed, Threatened**

**CAN: Candidate for State listing**

**RARE: State listed, Rare**

**FP: Fully Protected Species**

SC: Special Concern Species

WL: Watch List Species

**CDFW state rankings** are a reflection of the overall condition of an element throughout its California range. The number after the decimal point represents a threat designation attached to the rank:

**S1** = Critically Imperiled. Less than (<) 6 Element Occurrences (EOs) OR < 1,000 individuals OR < 2,000 acres

**S1.1** = very threatened

**S1.2** = threatened

**S1.3** = no current threats known

**S2** = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

**S2.1** = very threatened

**S2.2** = threatened

**S2.3** = no current threats known

**S3** = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres

**S3.1** = very threatened

**S3.2** = threatened

**S3.3** = no current threats known

**S4** = Apparently Secure. Uncommon but not rare in the state; some cause for long-term concern.

**S5** = Secure. Common, widespread, and abundant in the state.

**SH** = All known California sites are historical, not extant

#### **California Native Plant Society (CNPS) designations:**

##### **Primary Categories**

LIST 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

LIST 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

LIST 2A: Plants Presumed Extirpated in California, But Common Elsewhere

LIST 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

LIST 3: Plants About Which More Information is Needed - A Review List

LIST 4: Plants of Limited Distribution - A Watch List

##### **Subdivisions within Categories**

0.1: Seriously threatened in California

0.2: Moderately threatened in California

0.3: Not very threatened in California

## **Peninsular Bighorn Sheep<sup>11</sup>**

The Peninsular bighorn sheep (*Ovis canadensis nelsoni*) is listed as “endangered” under the federal Endangered Species Act (FESA) and “threatened” under the California Endangered Species Act

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<sup>11</sup> “Peninsular Desert Bighorn Sheep,” California Department of Fish & Wildlife. 2016.

(CESA). It is also a fully protected species under California Fish and Wildlife Code 4700. The peninsular population of desert bighorn sheep is composed of native ungulates that live on the desert slopes of the Peninsular Ranges in San Diego, Riverside, and Imperial Counties. This population, which ranges from the San Jacinto Mountains south to the U.S.-Mexico border, inhabits rocky slopes and cliffs, canyons, washes and alluvial fans.

Like other bighorn sheep, PBS prefer rugged and open habitat, and use their climbing abilities, vigilance, and excellent vision to detect and escape from predators. They are generalist herbivores and eat a wide variety of desert plants, including cacti. In summer, the distribution of PBS is often associated with scarce water sources. Female bighorn sheep (ewes) live in groups with their offspring and have smaller home ranges than males (rams). Males move between female groups, joining them during the summer and fall breeding season. Most lambs are born in winter and spring when desert plant productivity is highest.

Mountain lions and other predators have greatly influenced the evolution of bighorn sheep, including two basic adaptations that largely define their habitat selection: (1) their agility on precipitous rocky slopes as a primary means of evading predators, and (2) their keen eyesight, which is their primary sense for detecting predators (Krausman et al. 1999). Shorter legs and a stocky build provide a low center of gravity and allow agility on steep, rocky slopes, but preclude the fleetness necessary to outrun coursing predators in less rocky terrain.

Consequently, bighorn sheep select visually open habitats that allow detection of predators at sufficient distances to allow adequate lead time to reach the safety of precipitous slopes commonly referred to as escape terrain. Optimal bighorn sheep habitat is open and contains steep, generally rocky slopes.<sup>12</sup> The steep terrain of the project planning area satisfies these habitat requirements.

Sparse, low vegetation provides visual openness and is a consequence of low rainfall mediated by seasonal temperature patterns (hot summers). These climatic extremes have important implications relative to nutrient availability for desert bighorn sheep. Bighorn sheep depend on the amount of green, growing (and flowering) vegetation in their habitat from which they select their diet. When soil moisture is too low for plant growth, nutrient intake drops to a low level that annually often persists for many months and even longer in drought periods. That background low diet quality is normally punctuated annually by a season of vegetation growth during the cool months (winter and spring). This growing season varies considerably from year to year in the amount of plant growth because of variation in timing and amount of rainfall. The life history of desert bighorn sheep revolves around that growing season, which is when lambs are born and reared. Females and lambs both require a high nutrient intake for lamb rearing to be successful, and that success varies with the amount of rainfall in the cool season.

PBS feed in habitat patches that have higher availability of more nutritious forage; however, this feeding behavior often entails a decision between safety (predation risk) and diet quality, because the patches with the highest availability of nutrients are often farther from escape terrain. Lambs are particularly

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<sup>12</sup> Wehausen, J.D., "Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier In the La Quinta Area of the Coachella Valley, Riverside County, California" July 2016. (see Appendix B.1)

vulnerable to predation during the lamb rearing season and females typically trade off diet quality for safety of lambs (Bleich et al 1997). Desert bighorn ewes also are known sometimes to leave lambs in safe habitat while they venture into more dangerous habitat to feed. As lambs grow, females are willing to venture farther from safer habitats with their lambs in search of nutrients. In contrast, males live separate from females much of the year and have more freedom to feed in habitats that would be risky for lambs. Males are also larger than females and consequently less vulnerable to predation, but they also potentially take more risks to become more successful breeders.

### PBS and the Urban Interface<sup>13</sup>

Over the past several decades, undisturbed PBS habitat at the base of the mountains was disturbed initially for agriculture and later for the development of golf course-oriented residential resorts, displacing PBS from their traditional habitat. Similar urbanization in traditional PBS habitat has occurred elsewhere in the Coachella Valley, most notably in Palm Desert and Rancho Mirage, where PBS populations were, and in some cases still are adversely affected by the proximity of and access to these urbanized areas. Urban development has created artificial sources of water and forage along the base of and within the foothills of the Peninsular Range, which have attracted PBS to what has been found to be a dangerous environment for them.

To use such habitats, desert bighorn sheep have to greatly alter their innate behavior of keeping a safe distance from humans as potential predators. PBS have readily developed a tolerance for human activities that are geographically predictable and non-threatening. Such habituation is adaptive in that the PBS minimize the waste of energy that would be expended fleeing from something that is not dangerous. It also is adaptive because they can utilize habitat near or within areas of human activity for feeding. Development of tolerance of humans occurs incrementally over time and is a behavioral attribute that is learned by lambs from their mothers and by other adult PBS accompanying those that have developed more tolerant behavior. Such behavioral shifts define subcultures within larger bighorn sheep populations, just as there can be multiple distinct habitat use patterns among females and between the sexes within what is typically defined as a bighorn sheep population. The use of golf courses and gardens in urban interfaces such as La Quinta represents an extreme expression of this habituation process. Most extreme in this regard are females that bring young lambs into the urban interface, a behavior that strongly contrasts with the innate tendency of females in the wild to trade off nutrient intake for safety of young lambs.

### Critical Habitat

In 2001, the USFWS designated 844,897 acres in portions of San Diego, Imperial, and Riverside Counties as critical habitat for PBS. In 2009, as a result of litigation, critical habitat was reduced to 376,938 acres. It generally includes moderate to steep, open slopes and canyons that are deemed essential to conservation of the species, including portions of the Santa Rosa Mountains within and in the immediate vicinity of the proposed action, as shown in Figure 10. The potential for PBS to become isolated from designated critical habitat is discussed in Section 3.3.2 below.

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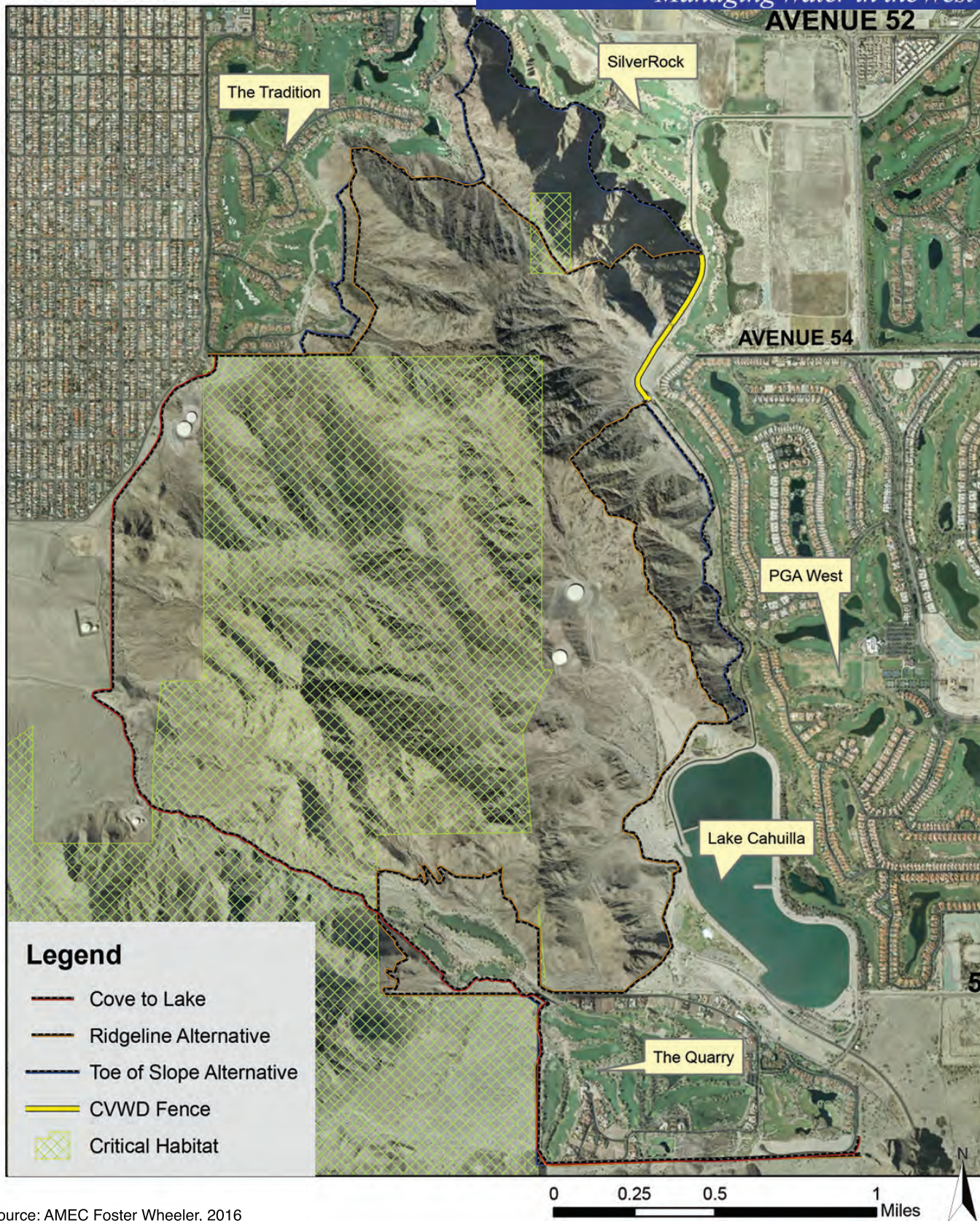
<sup>13</sup> Ibid.



# RECLAMATION

*Managing Water in the West*

AVENUE 52



Source: AMEC Foster Wheeler, 2016



**CVCC Peninsular Bighorn Sheep Barrier Project**  
**Environmental Assessment**  
**Critical Habitat for PBS**  
**La Quinta, California**



Figure

10



### Respiratory Disease in Bighorn Sheep

A persistent and compounding problem for this local PBS population is the periodic emergence of respiratory disease, specifically pneumonia, which is important because of the association of that disease with bighorn sheep living in the urban interface in the Peninsular Ranges of California. Much of the history of bighorn sheep since the appearance of Europeans in western North America revolves around repeated population die-offs from diseases. Pneumonia and psoroptic scabies (a form of mange) have had the greatest population-level effects. Both diseases apparently have resulted from the transmission of causative agents to bighorn sheep from domestic livestock, primarily domestic sheep and goats – a transmission well documented for one pneumonia-associated bacterial strain. In western North America, the distribution of native wild sheep remains unchanged in areas to the north of where domestic sheep have grazed, and no respiratory disease epizootic (wildlife equivalent of human epidemic) has ever been documented (Wehausen et al. 2011).

While many early bighorn sheep die-offs were attributed to scabies, respiratory disease appears to have been the larger factor, and the microbes involved are pathogenic to bighorn sheep but not to domestic sheep. Bighorn sheep show a high susceptibility to pneumonia in general, perhaps reflecting a fragile immune system. Pneumonia outbreaks typically involve bacteria of the genus *Pasteurella* and its recent taxonomic derivatives, but recently a different bacterial species, *Mycoplasma ovipneumoniae*, has been implicated in bighorn sheep pneumonia die-offs. History has shown that pneumonia caused by such bacteria alone, or in combination with other pathogens, is the most significant disease threat for bighorn sheep. While respiratory disease episodes in bighorn sheep may mostly be initiated by the introduction of pathogenic microbes from livestock, pneumonia also may develop, or take a different course, if the immune system is compromised by other factors. In short, there appear to be multiple pathways to respiratory disease in bighorn sheep.

New appearances of pneumonia in bighorn sheep frequently begin with all-ages die-offs in the first year, in which a large proportion of adults and young PBS die. This is typically followed by numerous years in which most lambs die of respiratory disease, apparently because some of the surviving adults continue to harbor pathogenic microbial strains and serve as a source of infection for each new lamb cohort (Cassirer et al. 2013). This lack of reproductive success leads to further population decline. There are no effective vaccines against this disease; thus, recommendations have emphasized the need for adequate buffer zones between bighorn sheep and domestic sheep or goats to minimize the risk of interspecies contact (Wehausen et al. 2011). A detailed discussion of sheep disease, use of urbanized lands, and population dynamics can be found in Appendix B.1.

### Effects of the Urban Environment on PBS

As noted above, urban development in the Coachella Valley has had a long and persistent effect on the size and health of the local populations of bighorn sheep. The recent colonization of the urban interface by bighorn sheep at La Quinta has a nearby potentially parallel situation to the northwest in Rancho Mirage. Bighorn sheep began to use urban habitat in Rancho Mirage decades earlier, a phenomenon which has been closely studied by the Bighorn Institute and others. The absence of other influences and ready access to water and highly nutritious forage in urban habitats would be expected to lead to a population increase through greater reproductive success. This did not occur at Rancho Mirage for multiple reasons.

The use of golf courses and gardens in urban interfaces such as La Quinta represents an extreme expression of the habituation process, including the use of streets and roadways by PBS, which have led to dangerous situations for drivers and PBS. Most extreme in this regard are females that bring young lambs into the urban interface, potentially risking the safety of young lambs. Individuals and groups of PBS are routinely observed foraging on urban vegetation and drinking from artificial water sources in the project area adjacent to the mountain slopes, including golf courses and residential developments. Since 2012, nineteen urban-related PBS mortalities have been documented in the project area, including three male adults and one male lamb drowned in the Coachella Canal. In addition, one male adult died as a result of an auto collision, one male died from oleander poisoning, and one male died of undetermined causes.<sup>14</sup> In the spring of 2015, one lamb succumbed in urban areas and in 2016, five lambs succumbed in urban areas due to pneumonia and other factors. In the spring of 2017, six lambs succumbed in urban areas within the project area.

The project is proposed to effectively exclude PBS access to urban development in the project area and maintain compliance with the Coachella Valley Multiple Species Habitat Conservation Plan and other conservation plans, which provide management guidance in instances where PBS are using artificial sources of food and water in urban lands.

#### PBS Current Habitat Use in the Planning Area

While the PBS Recovery Plan defined the Central Santa Rosa Mountains (CSRM) group as a herd unit relative to recovery goals, it also recognized two separate female subpopulations within that unit, referred to as Deep Canyon and Martinez Canyon ewe groups. The recent deployment of GPS collars in the CSRM unit has verified these distinct, but overlapping, home range patterns among wild-living ewes. However, emerging data also suggest that the home range pattern of ewes in the northern portion of the Southern Santa Rosa Mountains ewe group has considerable geographic overlap with the Martinez Canyon ewe group (see Figure 11).

As Figure 12 also illustrates, the PBS living in and near the urban habitat represent an additional habitat use pattern clearly distinct from the wild-living ewes. The use of urban habitat at La Quinta began with males in 2007, and females apparently began to enter that habitat in 2012.<sup>15</sup> This habituation by females has occurred rapidly since 2012, as evidenced by the finding that females with small lambs were already documented in that urban habitat in 2015. A notable feature for the ewes utilizing this urban habitat and fitted with GPS collars is their small annual home range size compared with wild-living ewes. This small annual home range size is another indicator of a very major behavioral change.

Among the ewes fitted with GPS collars are two that have exhibited habitat use patterns indicating they are in different stages of shifting from a wild pattern to an urban pattern. One ewe has shown increasing use of the urban interface over time, while the other has been spending considerable time close to the

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<sup>14</sup> “Bighorn Institute Documentation of Urban Related Mortalities in La Quinta,” Bighorn Institute, August 2012 to August 2015; comment letter from James R. DeForge, Bighorn Institute, March 28, 2016; Janene Colby, personal communication, California Department of Fish and Wildlife, 2017; Jenness McBride, personal communication, U.S. Fish and Wildlife Service, 2017.

<sup>15</sup> J. DeForge, pers. comm.; U. S. Fish and Wildlife Service and California Department of Fish and Wildlife, 2014.

urban interface, apparently watching PBS that are using that urban habitat and probably interacting with them when they are outside of the urban interface; she has yet to venture into the urban habitat.<sup>16</sup> In 2016, a yearling ram that was not a known surviving lamb from 2015 joined the PBS group utilizing the urban habitat at La Quinta. His more skittish behavior compared with the two surviving lambs from 2015 (both female) helped to identify him as a likely immigrant.<sup>17</sup>

One way biologists assess the overall health of a herd is the rate at which lambs survive (to three months) and are recruited into the herd as yearlings (yearling = survival to one year). Data is collected on ewe pregnancy rates, lambing rates, lambing locations, timing of lamb mortality, and causes of lamb mortality; recruitment is monitored and reported for lamb:ewe ratio (lambs per 100 ewes) and yearling:ewe ratio (yearlings per 100 ewes).

Research conducted during 2015 and 2016 for PBS utilizing golf course habitat at La Quinta show a change in yearling recruitment that is consistent with the respiratory disease observed in lambs beginning in 2015. As shown in Table 9, recruitment of the 2014 lamb cohort as yearlings in 2015 for the golf course bighorn sheep was statistically equivalent to non-urban bighorn sheep in its ratio to ewes sampled. A year later this had changed, with low yearling recruitment for the golf course bighorn sheep sampling at one third (0.11 yearling:ewe ratio) that of the wild-living PBS (0.33 yearling:ewe ratio); most of the lambs born to golf course ewes had died. A similar pattern emerged for the 2016 and 2017 lamb cohorts using golf courses. Most lambs have exhibited clinical signs of severe respiratory disease, and the deaths of twelve lambs have been documented on the golf courses and adjacent urban areas. Postmortem analyses of those lambs have found (1) major pneumonia lesions in lungs, (2) presence of *Mycoplasma ovipneumoniae* in the respiratory tract, and (3) severe copper deficiency.<sup>18</sup> Copper deficiency is known to suppress the immune system and lead to poor performance in young.

**Table 9**  
**Ewe Group Sampling Data**

<b>Location</b>	<b>Year</b>	<b>Sampling Period</b>	<b>Ewes Sampled</b>	<b>Yearling: Ewe Ratio<sup>b</sup></b>
Wild	2015	12/19/14 – 4/8/15	16	0.38
Urban	2015	12/19/14 – 5/6/15	72	0.35
Wild	2016	2/5/16 – 3/23/16	43	0.33
Urban	2016	1/26/16 – 3/4/16	55	0.11

<sup>a</sup> Data courtesy of Janene Colby, California Department of Fish and Wildlife.

<sup>b</sup> Recent yearling recruitment rates in the Central Santa Rosa Mountains bighorn sheep herd measured for wild sheep living away from the urban interface and the subpopulation living on and near golf courses. The samples from 2015 are not statistically different ( $P = 0.833$ ), whereas the samples from 2016 are statistically different ( $P = 0.00832$ ).

<sup>16</sup> Janene Colby, Unpublished data. California Department of Fish and Wildlife, 2016.

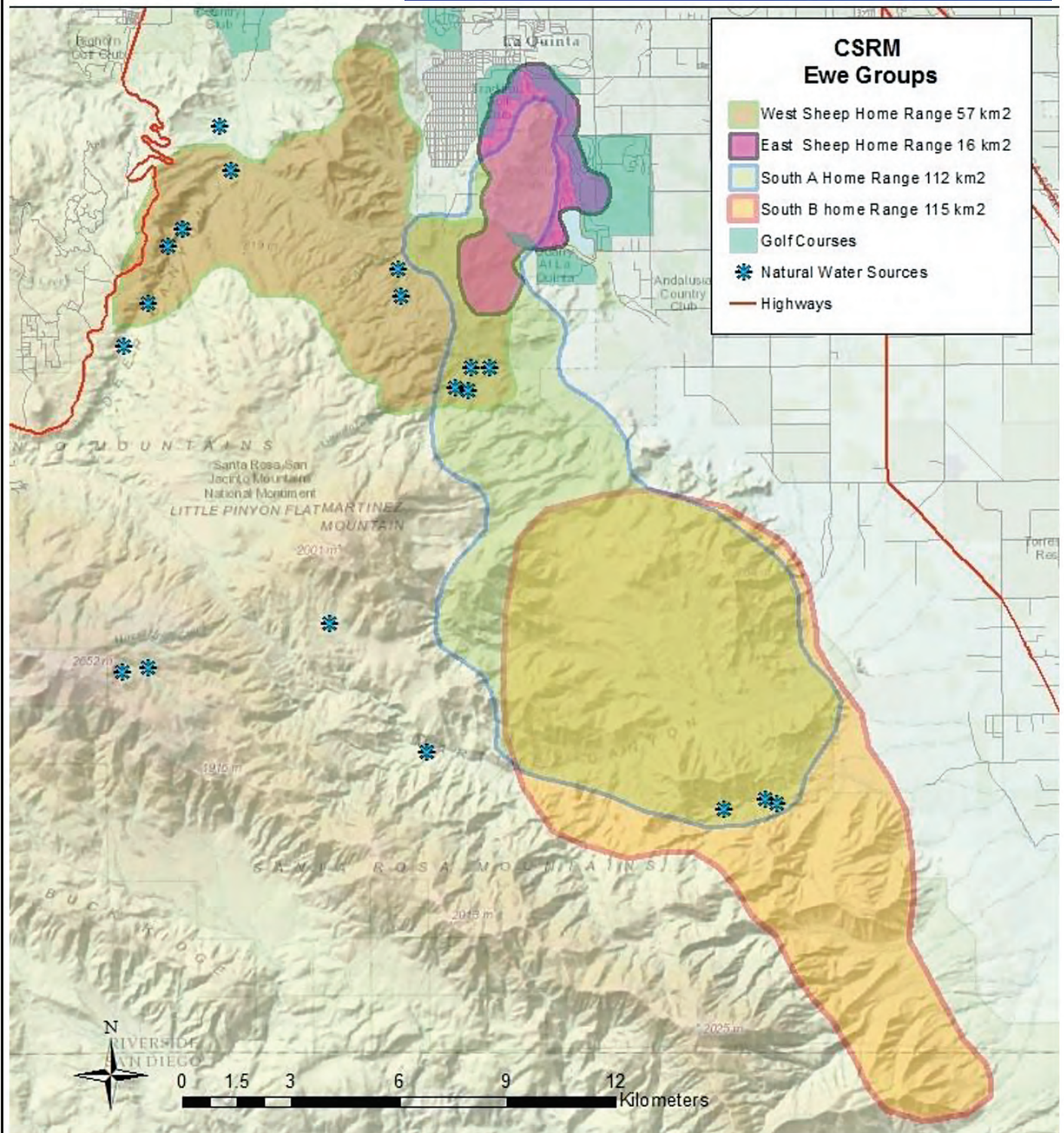
<sup>17</sup> Aimee Byard, pers. comm.; Bighorn Institute, 2016.

<sup>18</sup> Ben Gonzales, California Department of Fish and Wildlife, Unpublished Data, as referenced in Wehausen, J.D., "Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier In the La Quinta Area of the Coachella Valley, Riverside County, California" July 2016 (see Appendix B.1).



# RECLAMATION

*Managing Water in the West*



09.07.16

Source: California Department of Fish and Wildlife; J. Wehausen, Biologist, 2016



**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Central Santa Rosa Mountains Herd Ewe Groups Map  
La Quinta, California**



Figure

11

Research on the subpopulation of ewes utilizing the urban habitat at La Quinta suggest a situation parallel to that of the herd in the Rancho Mirage area during 1985-1997. In both situations, use of the urban habitat appears to have exacerbated a respiratory disease process that may have been ongoing. For the La Quinta group this disease episode may stem from a domestic sheep that was found with these bighorn sheep in 2005.<sup>19</sup> A recent retrospective analysis of lung tissues from that domestic sheep identified the presence of *Mycoplasma ovipneumoniae* but was unable to determine the strain.<sup>20</sup>

#### Existing Factors Affecting Lamb Mortality

Both alluvial and mountain habitat of the Peninsular bighorn sheep in the Coachella Valley have been incrementally lost or impacted by urban development, and the size and health of this local population has likely been affected. Nonetheless, the factors causing notably higher lamb mortality in the urban interface are not known, but may be associated with increased social interactions among PBS, as evidenced at the subject golf courses, that lead to higher rates of transmission of pathogenic bacteria.

Severe copper deficiencies also may be involved in these lamb mortalities, and have not been found in wild-living lambs much farther south in the Peninsular Ranges of California. However, it is not known if the levels recorded for lambs dying in the urban habitat of La Quinta are different from other lambs living in the adjacent wild habitats. Other unknown factors in the urban environment of La Quinta may also play a role. The Northern Santa Rosa Mountains (NSRM) ewe group experienced a major spike in lamb survival during 1998-2002 while utilizing the urban habitat.<sup>21</sup>

While the causes may be many, the low level of lamb recruitment recently recorded for the urban habitat ewes at La Quinta can be expected to lead to a declining population trend if it continues in the future. However, to an unknown extent, lamb recruitment may be enhanced at least in the near-term by the increased availability of forage and water that has encouraged the bighorn sheep's increasing urban habitat use pattern. In the longer term, continued use of this urban habitat by PBS may result in a population decline similar to the history of the NSRM herd in Rancho Mirage. This situation (urban area use) can be viewed as a potential extinction vortex that will likely pull in increasing numbers of ewes from the wild and transform them to a urbanized subpopulation with reduced reproductive success that is inadequate for long-term persistence. This pattern of use of and reliance upon these urban lands may also affect the long-term herd memory of finding foraging areas and watering sources, especially during dry years, in natural undisturbed PBS habitat.

In 2010, the total number of bighorn sheep in the CSRM herd unit was estimated at 133 (Colby and Botta 2014), of which 71 were ewes (Colby and Botta 2012). Existing data suggested a stable ewe population between 2006 and 2010, with fall lamb:ewe ratios varying between 0.35 and 0.51 (Colby and Botta 2012). In November 2016, the CDFW conducted a helicopter survey of the nine subpopulations of

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<sup>19</sup> Wehausen, J.D., "Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier In the La Quinta Area of the Coachella Valley, Riverside County, California" July 2016. (see Appendix B.1)

<sup>20</sup> Op. cit. Gonzales.

<sup>21</sup> Wehausen, J.D., "Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier In the La Quinta Area of the Coachella Valley, Riverside County, California" July 2016. (see Appendix B.1)



PBS along the Peninsular Range from Palm Springs to the US/Mexico border.<sup>22</sup> Based on the preliminary results of the 2016 bighorn sheep helicopter survey prepared by CDFW (Botta and Colby 2016), the estimated number of females, males and yearlings in the Central Santa Rosa subpopulation decreased slightly from 133 to 119 individuals between 2010 and 2016.

The numbers of ewes observed using the urban habitat in La Quinta in 2015 and 2016 has been as high as 30 animals and more.<sup>23</sup> Relative to the 2010 population estimate, this suggests that about a quarter of the ewes in the CSRM herd unit are using this urban habitat. This relatively low percentage speaks to the recent shift to this habitat selection pattern. The home range pattern of the ewes using this urban habitat overlaps both of the home range patterns of wild-living ewes in the CSRM herd unit (Figure 11). This suggests the potential for large numbers of ewes to be drawn into this urban habitat use pattern.

The data reviewed here point to the importance of ending the use of the urban habitat at La Quinta before that behavioral pattern draws in more PBS from the CSRM herd and expands to penetrate further into the urban habitat. There are multiple reasons to end this pattern. While the use of this urban habitat appears detrimental to PBS, bighorn sheep on the roads present a hazard to both bighorn sheep and vehicle occupants. Bighorn sheep are also detrimental to golf course management and to landscaped areas. Wild habitat in this region has multiple natural water sources and forage resources available for these animals to use when they are forced to shift back to living in the wild. Most of these urban PBS lived as wild animals relatively few years ago, making this an opportune time to transition them back to living in the wild. As part of this effort, natural water sources will be improved through the removal of non-native salt cedar; the potential for artificial water sources to benefit the bighorn sheep in this transition will be evaluated.

It should be recognized that the altered behavior involved in repeated use of this urban habitat by bighorn sheep has parallels in a variety of unhealthy human addictions. Similar to such human addictions, reversing this behavior pattern will not be easy; the habituated bighorn sheep can be expected to make every effort to continue to access golf courses and urban areas for food and water.

### **3.3.2 Environmental Consequences**

No Action – Under the No Action Alternative, no fence would be licensed by Reclamation and/or BLM to be built on Reclamation and/or BLM lands, or on other public or private lands within the planning area. As a consequence, no new impacts associated with federally licensed fence construction or that precluded on other planning area lands would occur to biological resources. If a fence is not constructed on non-federal lands (as described in the CVCC Draft EIR), PBS would continue to access urban land in the project area and be susceptible to urban-related hazards, including injury or death, and it is assumed that take of the species would continue to occur. The No Action Alternative would conflict with the management actions required by the CVMSHCP and the PBS Recovery Plan.

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<sup>22</sup> *Results of the 2016 bighorn sheep helicopter survey in the Peninsular Ranges of southern California*. California Department of Fish and Wildlife, R. Botta and J. Colby. December 2016.

<sup>23</sup> Janene Colby, CDFW, unpublished data. 2016.

## Proposed Action

Alternative A: Under this alternative, PBS access to urban land in the project area would be eliminated in the area of Reclamation and/or BLM lands, as well as CVWD, County Parks, City of La Quinta and private lands. Additionally, PBS would not be able to access approximately 130 acres of non-urban bighorn sheep habitat, none of which is designated as critical habitat for PBS. Specific to federal lands, approximately 7.69 acres of PBS habitat on Reclamation lands would be isolated from PBS use; none of these lands are designated as critical habitat. No BLM lands with PBS habitat, including those designated as critical, would be isolated from PBS use. In summary, no designated critical habitat on federal or other lands would be removed from PBS access.

The project could interfere with the movement of other larger resident wildlife, but their access to adjacent urban land is not essential to their survival, and the potential occurrence of other large, sensitive species in the project area is considered low to moderate. Potential impacts to smaller species are expected to be limited, given the permeability of the fence. Alternative A will have no impact on riparian habitat, vernal pools, marshes, wetlands, or special-status natural communities. Alternative A is responsive to the management requirements of the CVMSHCP and PBS Recovery Plan, and is expected to reduce take of PBS.

Alternative A2: The A2 refinement to Alternative A diverts the project fence to the west, into rising terrain west of the Coachella Canal, then in a southwesterly direction onto CVWD land. The fence will proceed southeast along the west side of the ridge and rejoin the original Alternative A alignment in the vicinity of the County Sheriff's shooting range. Compared to Alternative A, A2 will increase the isolation of PBS habitat by approximately 111.6 acres, 8.75 acres of which is Reclamation land and none of which is BLM land or land designated "critical habitat." Under this alternative, PBS access to urban land west of the canal in this area would be eliminated. The total PBS habitat that would be isolated from sheep use under Alternative A2 is 241.95± acres. No designated critical habitat on federal or other lands would be removed from PBS access.

Alternative B: Under Alternative B, PBS would not be able to access approximately 422± acres of non-urban habitat. Approximately 14.46 acres of BLM lands are designated as critical habitat for PBS. Approximately 16.67 acres of isolated PBS habitat are on Reclamation lands, none of which is designated as critical habitat for PBS. In summary, 14.46 acres of BLM lands designated as critical habitat would be removed from PBS access.

Under this Alternative, most of the habitat acreage to which PBS access would be lost is located on the slopes above SilverRock and PGA West, and adjacent to the northwestern extension of the Quarry Golf Course. Alternative B could affect the movement of other sensitive species, including burrowing owl and desert tortoise; however, the probability of occurrence of these species in the project area is considered low. Alternative B will have little to no direct impact on smaller sensitive species, such as the flat-tailed horned

lizard and red-diamond rattlesnake, given their low probability of occurrence and their ability to cross the barrier. Alternative B will have no impact on riparian habitat, vernal pools, marshes, wetlands, or special-status natural communities. Alternative B will reduce take of PBS associated with their use of urbanized lands and is consistent with the PBS management requirements of the CVMSHCP and Recovery Plan for PBS.

Alternative B2: Alternative B2 would eliminate PBS access to 742.74± acres of habitat currently available to them, including approximately 19.61± acres of designated critical habitat located on BLM lands. No critical habitat occurring on Reclamation lands would be isolated from PBS use under the Alternative B2 scenario. Most of this acreage to which PBS access would be lost is located on the slopes above SilverRock, Tradition and PGA West, and adjacent to the northwestern extension of the Quarry Golf Course. Alternative B2 could affect the movement of other large, sensitive species, including burrowing owl and desert tortoise; however, the probable occurrence of these species in the project area is considered low. Alternative B2 will have little to no direct impact on smaller sensitive species, such as the flat-tailed horned lizard and red-diamond rattlesnake, given their ability to cross the barrier and low likelihood of occurring here. Alternative B2 will have no impact on riparian habitat, vernal pools, marshes, wetlands, or special-status natural communities. Alternative B2 will reduce take of PBS associated with their use of urbanized lands, and is consistent with the PBS management requirements of the CVMSHCP and Recovery Plan for PBS.

Alternative C: Under Alternative C, PBS access to urban land in the project area of Reclamation and/or BLM lands, as well as to CVWD, County Parks and private lands would be eliminated, and take of PBS would be expected to be reduced. Alternative C would also remove PBS access to 2,400± acres of currently available habitat; approximately 1,108.7± of these acres are designated critical habitat for PBS, all of which are located on BLM lands. Alternative C, especially where built on BLM lands, would require a means to physically handle and remove PBS from “behind” the fence, while avoiding actions that would result in take or other violations of the ESA. The probable occurrence of other special status species in the project area is low to moderate and none have been identified that would be adversely affected by the fence in the unlikely event they did occur in the project area. The movement of larger sensitive species, including burrowing owl and desert tortoise, could be affected by the fence. The potential for tortoise occurrence is considered low but the fence would not pose a significant barrier to tortoise as they readily burrow under similar fences. Burrowing owls have not been identified in the planning area but the fence would not be a significant impediment to the movement of this species. Impacts to smaller sensitive species, including flat-tailed horned lizard and red-diamond rattlesnake, would be limited given the permeability of the fence. Alternative C would have no impact on riparian habitat, vernal pools, marshes, wetlands, or special-status natural communities. It is responsive to the management requirements of the CVMSHCP and Recovery Plan for PBS, and is expected to reduce take of PBS.

### 3.3.3 Management and Mitigation Measures

The following mitigation measures would be implemented.

Alternatives A and A2:

- BIO-1 Prior to the initiation of project construction, CVCC and representatives of the Wildlife Agencies (CDFW and USFWS), BLM and Reclamation, CVWD, County Parks and private property owners shall walk and finalize the Alternative A alignment, which shall also be staked at that time to ensure that the alignment is fixed in the field.
- BIO-2 Biological monitoring shall be conducted on all project-related disturbances that have the potential to affect special-status biological resources. The biological monitor shall be qualified in the identification of the special-status biological resources potentially occurring along the selected alignment and would have the authority to contact the resource agencies (i.e., USFWS, CDFW, Reclamation, BLM, CVCC, etc.) should special-status biological resources be encountered during barrier installation, and to temporarily halt any and all project-related activities that threaten special-status resources in order to avoid and/or minimize impacts. Examples include: bighorn sheep, desert tortoise, burrowing owl, active prairie falcon nests (or any other bird nests) observed in the immediate vicinity of the Reclamation and/or BLM alignments, and other potentially affected alignments.
- BIO-3 Impact avoidance and/or minimization measures that shall be implemented by the biological monitor include:
  - A. Preconstruction clearance surveys of the portions of the alignment proposed for immediate installation. The biological monitor shall conduct preconstruction clearance surveys immediately prior (i.e., the morning of and/or the day prior) to commencement of daily operations to detect special-status biological resources present within the current work zone. Any/all special-status biological resources found in the immediate vicinity would be marked/mapped with a handheld GPS, flagged in the field for avoidance and monitored during construction to ensure that impacts to these resources are avoided and/or minimized to the greatest extent possible.
  - B. The monitor may issue a temporary stop work order to allow special-status fauna (i.e., desert tortoise, Coachella Valley round-tailed ground squirrel, PBS, etc.) to move away from the active work zone on their own accord without interference from project personnel.
  - C. Physical capture, temporary handling and immediate relocation of special-status fauna if appropriate (i.e., desert tortoise, red-diamond rattlesnake, etc.) by an individual with the appropriate permits and experience to do so, after receipt of verbal authorization from respective resource agencies.



- D. Implementation of a Worker Environmental Awareness Program (WEAP) to inform project personnel working in the field of the potential presence of special-status biological resources along the alignment. The WEAP would include photographs, descriptions, conservation status, impact avoidance and minimization measures proposed and penalties associated with unauthorized impacts to the special-status species potentially occurring along the alignment. project personnel would be required to attend the WEAP and sign an acknowledgment of attendance and agreement to comply with the measures outlined in the WEAP, CVMSHCP and project permit requirements.
- E. Trash containment and proper disposal to avoid attracting scavengers and predators.

- BIO-4 In conformance with the Migratory Bird Treaty Act and to avoid impacts to nesting migratory birds by project activities, the project proponent shall:
- A. Avoid project-related disturbance during the nesting season (generally from January 15 through July 31 for the Coachella Valley) or conduct nesting bird surveys by a qualified ornithologist or biologist immediately prior to site disturbance during the nesting season.
  - B. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer.

Northern Red-Diamond Rattlesnake and Flat-tailed Horned Lizard

- BIO-5 Upon the initiation of construction, biological monitoring, daily preconstruction clearance surveys, trash control and abatement shall be conducted to avoid attracting and supplementing potential predators to help avoid and minimize project-related impacts (i.e., direct mortality or injury).
- BIO-6 If these species are found along the fence alignment, the biological monitor shall have the authority to temporarily halt project-related activities in the immediate vicinity to allow the species to vacate the area and avoid project impacts. If these species do not vacate the immediate vicinity on their own accord, the biological monitor would have the authority to physically capture, temporarily handle and relocate individual animals to nearby areas outside of the project footprint (with regulatory agency concurrence). The biological monitor shall be trained and qualified in the handling and transport of venomous snakes.

Burrowing Owl

- BIO-7 In order to ensure that impacts to burrowing owl are less than significant, at least 14 days before (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and not more than 30 days before the commencement of construction, pre-construction owl survey shall be conducted for the three potential burrow sites identified in the burrowing owl report, as set forth as follows:

1. CVCC shall conduct pre-construction burrow searches and burrowing owl surveys at Habitat Sites 1, 2 and 3, as shown on Figure 1 of the owl report (see Appendix B.3).
2. A final burrowing owl survey shall be conducted at the cited locations within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol. If no burrowing owls are detected during those surveys, implementation of ground disturbance activities may proceed without further consideration of this species, assuming there is no lapse between the surveys and construction because, as the protocol states, "time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance."
3. If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures shall be required and the need for mitigation for unavoidable impacts triggered. Avoidance and minimization measures include: establishing a buffer zone, installing a visual barrier, implementing burrow exclusion and/or closure techniques, in conformance with CDFW protocol.

#### Bighorn Sheep

- BIO-8 Prior to the initiation of fence construction, CVCC and the Wildlife Agencies shall develop and implement a strategic construction plan that anticipates PBS response to this activity and provides for control and management in coordination with potentially affected property owners. This measure will ensure PBS are kept on the proper side of the barrier and that impacts to PBS during construction are minimized.
- BIO-9 The final design and alignment selection shall identify locations for entry gates that provide access necessary to retrieve PBS on the wrong side of the fence, to maintain the fence and to address other issues within the area bounded by the fence.
- BIO-10 Alternative water sources upslope of the fenced areas may be provided for bighorn sheep in consultation with CDFW, USFWS, CVWD, BLM and other landowners. It may be possible to provide water sources in view of the golf courses that would allow the public to see bighorn sheep up on the ridgelines but keep them away from urban areas.
- BIO-11 Reclamation and BLM, as well as CVCC, shall consult and coordinate with the USFWS and CDFW to ensure that the fence is constructed during those times of the year that minimize stress to PBS.
- BIO-12 The BLM and Reclamation shall mitigate for the loss of PBS access to designated Peninsular bighorn sheep habitat resulting from the implementation of the barrier on Reclamation and/or BLM lands in a manner consistent with the CVMSHCP.

Alternatives B and B2:

- BIO-1 Prior to the initiation of project construction, CVCC and representatives of the Wildlife Agencies (CDFW and USFWS), BLM and Reclamation, CVWD, County Parks and private property owners shall walk and finalize the Alternative B alignment, which shall also be staked at that time to ensure that the alignment is fixed in the field.
- BIO-2 Biological monitoring shall be conducted on all project-related disturbances that have the potential to affect special-status biological resources. The biological monitor shall be qualified in the identification of the special-status biological resources potentially occurring along the selected alignment and would have the authority to contact the resource agencies (i.e., USFWS, CDFW, Reclamation, BLM, CVCC, etc.) should special-status biological resources be encountered during barrier installation and to temporarily halt any and all project-related activities that threaten special-status resources in order to avoid and/or minimize impacts. Examples include: bighorn sheep, desert tortoises, flat-tailed horned lizard, burrowing owl, active prairie falcon nests (or any other bird nests; also see BIO-4, below) observed in the immediate vicinity of Reclamation and/or BLM alignments, and other potentially affected alignments.
- BIO-3 Impact avoidance and/or minimization measures that shall be implemented by the biological monitor include:
- A. Preconstruction clearance surveys of the portions of the alignment proposed for immediate installation. The biological monitor shall conduct preconstruction clearance surveys immediately prior (i.e., the morning of and/or the day prior) to commencement of daily operations to detect special-status biological resources present within the current work zone. Any/all special-status biological resources found in the immediate vicinity would be marked/mapped with a handheld GPS, flagged in the field for avoidance and monitored during construction to ensure that impacts to these resources are avoided and/or minimized to the greatest extent possible.
  - B. The monitor may issue a temporary stop work order to allow special-status fauna (i.e., desert tortoise, Coachella Valley round-tailed ground squirrel, PBS, etc.) to move away from the active work zone on their own accord without interference from project personnel.
  - C. Physical capture, temporary handling and immediate relocation of special-status fauna if appropriate (i.e., desert tortoise, red-diamond rattlesnake, etc.) by an individual with the appropriate permits and experience to do so, after receipt of verbal authorization from respective resource agencies.
  - D. Implementation of a Worker Environmental Awareness Program (WEAP) to inform project personnel working in the field of the potential presence of special-status biological resources along the alignment. The WEAP would include photographs, descriptions, conservation status, impact

avoidance and minimization measures proposed and penalties associated with unauthorized impacts to the special-status species potentially occurring along the alignment. Project personnel would be required to attend the WEAP and sign an acknowledgment of attendance and agreement to comply with the measures outlined in the WEAP, CVMSHCP and project permit requirements.

E. Maintain trash containment and proper disposal to avoid attracting scavengers and predators.

BIO-4 In conformance with the Migratory Bird Treaty Act and to avoid impacts to nesting migratory birds by project activities, the project proponent shall:

A. Avoid project-related disturbance during the nesting season (generally from January 15 through July 31 for the Coachella Valley) or conduct nesting bird surveys by a qualified ornithologist or biologist immediately prior to site disturbance during the nesting season.

B. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer.

#### Red-Diamond Rattlesnake and Flat-tailed Horned Lizard

BIO-5 Upon the initiation of construction, biological monitoring, daily preconstruction clearance surveys, trash control and abatement shall be conducted to avoid attracting and supplementing potential predators to help avoid and minimize project-related impacts (i.e., direct mortality or injury).

BIO-6 If these species are found along the fence alignment, the biological monitor shall have the authority to temporarily halt project-related activities in the immediate vicinity to allow the species to vacate the area and avoid project impacts. If these species do not vacate the immediate vicinity on their own accord, the biological monitor would have the authority to physically capture, temporarily handle and relocate individual animals to nearby areas outside of the project footprint (with regulatory agency concurrence). The biological monitor shall be trained and qualified in the handling and transport of venomous snakes.

#### Burrowing Owl

BIO-7 In order to ensure that impacts to burrowing owl are less than significant, at least 14 days before (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and not more than 30 days before the commencement of construction, pre-construction owl survey shall be conducted for the three potential burrow sites identified in the burrowing owl report, as set forth as follows:

1. CVCC shall conduct a pre-construction burrow search and burrowing owl survey at Habitat Site 3, as shown on Figure 1 of the owl report (see Appendix B.3).

2. A final burrowing owl survey shall be conducted at the cited location within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol. If no burrowing owls are detected during those surveys, implementation of ground disturbance activities may proceed without further consideration of this species, assuming there is no lapse between the surveys and construction because, as the protocol states, "time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance."
3. If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures shall be required and the need for mitigation for unavoidable impacts triggered. Avoidance and minimization measures include: establishing a buffer zone, installing a visual barrier, implementing burrow exclusion and/or closure techniques, in conformance with CDFW protocol.

#### Bighorn Sheep

- BIO-8 Prior to the initiation of fence construction, CVCC and the Wildlife Agencies shall develop and implement a strategic construction plan that anticipates PBS response to this activity and provides for control and management in coordination with potentially affected property owners. This measure will ensure PBS are kept on the proper side of the barrier and that impacts to PBS during construction are minimized.
- BIO-9 The final design and alignment selection shall identify locations for entry gates that provide access necessary to retrieve PBS on the wrong side of the fence, to maintain the fence and to address other issues within the area bounded by the fence.
- BIO-10 Alternative water sources upslope of the fenced areas may be provided for bighorn sheep in consultation with CDFW, USFWS, CVWD, BLM and other landowners. It may be possible to provide water sources in view of the golf courses that would allow the public to see bighorn sheep up on the ridgelines but keep them away from urban areas.
- BIO-11 Reclamation and BLM, as well as CVCC, shall consult and coordinate with the USFWS and CDFW to ensure that the fence is constructed during those times of the year that minimize stress to PBS.
- BIO-12 The BLM and Reclamation shall mitigate for the loss of PBS access to designated Peninsular bighorn sheep habitat resulting from the implementation of the barrier on Reclamation and/or BLM lands in a manner consistent with the CVMSHCP.

#### Alternative C:

- BIO-1 Prior to the initiation of project construction, CVCC and representatives of the Wildlife Agencies (CDFW and USFWS), BLM and Reclamation, CVWD,



County Parks and private property owners shall walk and finalize the Alternative C alignment, which shall also be staked at that time to ensure that the alignment is fixed in the field.

BIO-2 Biological monitoring shall be conducted on all project-related disturbances that have the potential to affect special-status biological resources. The biological monitor shall be qualified in the identification of the special-status biological resources potentially occurring along the selected alignment and would have the authority to contact the resource agencies (i.e., USFWS, CDFW, Reclamation, BLM, CVCC, etc.) should special-status biological resources be encountered during barrier installation and to temporarily halt any and all project-related activities that threaten special-status resources in order to avoid and/or minimize impacts. Examples include: bighorn sheep, desert tortoises, flat-tailed horned lizard, burrowing owl, active prairie falcon nests (or any other bird nests; also see BIO-4, below) observed in the immediate vicinity of Reclamation and/or BLM alignments, and other potentially affected alignments.

BIO-3 Impact avoidance and/or minimization measures that shall be implemented by the biological monitor include:

- A. Preconstruction clearance surveys of the portions of the alignment proposed for immediate installation. The biological monitor shall conduct preconstruction clearance surveys immediately prior (i.e., the morning of and/or the day prior) to commencement of daily operations to detect special-status biological resources present within the current work zone. Any/all special-status biological resources found in the immediate vicinity would be marked/mapped with a handheld GPS, flagged in the field for avoidance and monitored during construction to ensure that impacts to these resources are avoided and/or minimized to the greatest extent possible.
- B. The monitor may issue a temporary stop work order to allow special-status fauna (i.e., desert tortoise, Coachella Valley round-tailed ground squirrel, PBS, etc.) to move away from the active work zone on their own accord without interference from project personnel.
- C. Physical capture, temporary handling and immediate relocation of special-status fauna if appropriate (i.e., desert tortoise, red-diamond rattlesnake, etc.) by an individual with the appropriate permits and experience to do so, after receipt of verbal authorization from respective resource agencies.
- D. Implementation of a Worker Environmental Awareness Program (WEAP) to inform project personnel working in the field of the potential presence of special-status biological resources along the alignment. The WEAP would include photographs, descriptions, conservation status, impact avoidance and minimization measures proposed and penalties associated with unauthorized impacts to the special-status species potentially occurring along the alignment. Project personnel would be required to

attend the WEAP and sign an acknowledgment of attendance and agreement to comply with the measures outlined in the WEAP, CVMSHCP and project permit requirements.

E. Trash containment and proper disposal to avoid attracting scavengers and predators.

BIO-4 In conformance with the Migratory Bird Treaty Act and to avoid impacts to nesting migratory birds by project activities, the project proponent shall:

A. Avoid project-related disturbance during the nesting season (generally from January 15 through July 31 for the Coachella Valley) or conduct nesting bird surveys by a qualified ornithologist or biologist immediately prior to site disturbance during the nesting season.

B. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer.

#### Northern Red-Diamond Rattlesnake and Flat-tailed Horned Lizard

BIO-5 Upon the initiation of construction, biological monitoring, daily preconstruction clearance surveys, trash control and abatement shall be conducted to avoid attracting and supplementing potential predators to help avoid and minimize project-related impacts (i.e., direct mortality or injury).

BIO-6 If these species are found along the fence alignment, the biological monitor shall have the authority to temporarily halt project-related activities in the immediate vicinity to allow the species to vacate the area and avoid project impacts. If these species do not vacate the immediate vicinity on their own accord, the biological monitor would have the authority to physically capture, temporarily handle and relocate individual animals to nearby areas outside of the project footprint (with regulatory agency concurrence). The biological monitor shall be trained and qualified in the handling and transport of venomous snakes.

#### Burrowing Owl

BIO-7 In order to ensure that impacts to burrowing owl are less than significant, at least 14 days before (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and not more than 30 days before the commencement of construction, pre-construction owl survey shall be conducted for the three potential burrow sites identified in the burrowing owl report, as set forth as follows:

1. CVCC shall conduct a pre-construction burrow search and burrowing owl survey at Habitat Site 3, as shown on Figure 1 of the owl report (see Appendix B.3).
2. A final burrowing owl survey shall be conducted at the cited location within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol. If no burrowing owls are detected during those surveys, implementation of ground disturbance

activities may proceed without further consideration of this species, assuming there is no lapse between the surveys and construction because, as the protocol states, "time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance."

3. If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures shall be required and the need for mitigation for unavoidable impacts triggered. Avoidance and minimization measures include: establishing a buffer zone, installing a visual barrier, implementing burrow exclusion and/or closure techniques, in conformance with CDFW protocol.

#### Bighorn Sheep

- BIO-8 Prior to the initiation of fence construction, CVCC and the Wildlife Agencies shall develop and implement a strategic construction plan that anticipates PBS response to this activity and provides for control and management in coordination with potentially affected property owners. This measure will ensure PBS are kept on the proper side of the barrier and that impacts to PBS during construction are minimized.
- BIO-9 The final design and alignment selection shall identify locations for entry gates that provide access necessary to retrieve PBS on the wrong side of the fence, to maintain the fence and to address other issues within the area bounded by the fence.
- BIO-10 Alternative water sources outside the fenced areas may be provided for bighorn sheep in consultation with CDFW, USFWS, CVWD BLM and other landowners.
- BIO-11 Reclamation and BLM, as well as CVCC, shall consult and coordinate with the USFWS and CDFW to ensure that the fence is constructed during those times of the year that minimize stress to PBS.
- BIO-12 Reclamation and BLM shall mitigate for the loss of PBS access to designated Peninsular bighorn sheep habitat resulting from the implementation of the sheep barrier on Reclamation and BLM lands in a manner consistent with the CVMSHCP.

## 3.4 Cultural Resources

### 3.4.1 Affected Environment

The National Historic Preservation Act (NHPA) establishes national policy for protecting significant cultural resources that are defined as “historic properties” under 36 CFR 60.4. NHPA Section 106 (36 CFR §800) requires that federal agencies consider and evaluate the effect that a federal project may have on historic properties under their jurisdiction. The area of potential effect (APE) for this undertaking includes the locations shown in Figure 12.

The BLM serves as Section 106 lead agency for the proposed action and reviews background information, consults with Reclamation (Reclamation, NEPA lead agency), State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO) and others, seeks information from knowledgeable parties, and conducts additional studies as necessary. If the BLM finds that no historic properties are present or affected, it provides documentation to the SHPO/THPO, who has 30 days to provide written comment or objection. If there is no objection, the agency proceeds with the actions as planned. If the agency finds that historic properties are present, it proceeds to assess possible adverse effects.

Authorized under the NHPA, the National Register of Historic Places is the nation’s official list of cultural resources that qualify for preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The following criteria are used to determine eligibility for inclusion in the National Register. These criteria have been developed by the National Park Service as provided for in the NHPA. They include “districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association” and in which are present “the quality of significance in American history, architecture, archaeology, engineering, and culture” and:

- a. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Are associated with the lives of persons significant in our past; or
- c. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. Yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

In addition to the criteria for evaluation above, the National Register maintains a list of property types or circumstances that generally do not qualify for the National Register. These are: cemeteries, birthplaces or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years.

The project area is within the historic territory of the Desert Cahuilla, whom archaeologists believe migrated to the Coachella Valley from the north as early as 2,000 to 3,000 years ago. The Cahuilla

established numerous villages in the region, including settlements near mountains and canyons, and around ancient Lake Cahuilla, the high stand of which occurred in the project area and harbored important plant and animal resources used by the Cahuilla. Numerous prehistoric resources have been documented in the project area, including trail remnants, cairn sites, ceramic scatters, habitation sites, and human remains.

As a part of the consultation process, a written request was submitted to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file.<sup>24</sup> The Commission indicated that the sacred lands record search yielded no records within the APE. The Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians were notified of the archaeological field surveys during 2016 and were invited to participate. Following the NAHC's recommendations and previously established consultation protocol, a total of 19 representatives of 11 local tribes were contacted both in writing and by telephone for additional information on potential Native American cultural resources that may be present within the APE.

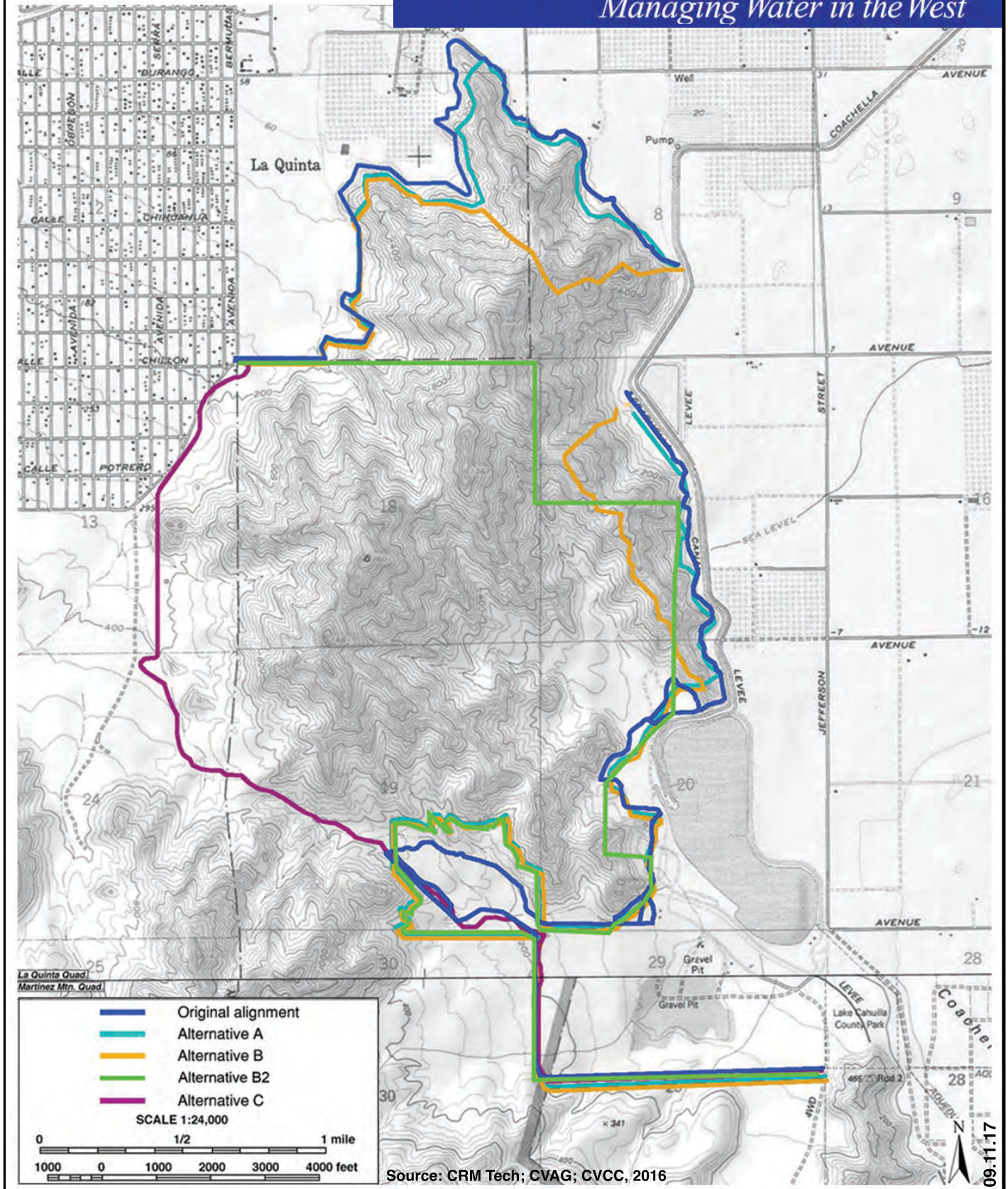
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<sup>24</sup> "Identification and Evaluation of Historic Properties – La Quinta Peninsular Bighorn Sheep Fence Project", prepared by CRM TECH. August 2016. (see Appendix C of this EA)



# RECLAMATION

*Managing Water in the West*



**CVCC Peninsular Bighorn Sheep Barrier Project  
Environmental Assessment  
Area of Potential Effect (APE)  
La Quinta, California**

Figure

**12**



### Historic Resources

Historic resources near the project area include Reclamation's Coachella Canal, built between 1935 and 1948 for the purpose of delivering irrigation water to the Coachella Valley. The segment nearest the project area is part of the original concrete-lined section of the Coachella Branch Canal, which was previously recommended as eligible for the National Register of Historic Places and California Register of Historical Resources as a model of canal construction during the 1930s and 1940s. A small, historic-period (c. 1913) refuse scatter located on the west side of the canal may also fall within the Reclamation's easement, but does not appear eligible for listing in the National Register or California Register, and does not qualify as an "historic property" or "historic resource".<sup>25</sup> No other historic resources have been identified on BLM or Reclamation lands that could be impacted by any of the project alternatives.

Another historic resource in the project area and outside federal lands is the Marshall Ranch/Hacienda Del Gato, constructed in the 1920s-40s and now part of the Tradition Golf Club. It has been identified as being eligible for listing on the National Register of Historic Places at the local level of significance as a contributor to a thematic district. This resource site was addressed during the development of the Tradition project, including capping of certain resources and other mitigation. None of the project alternatives will further impact this historic resource site.

### Prehistoric Resources

A comprehensive literature search and cultural resource survey were conducted for the project area.<sup>26</sup> Seven archaeological sites and two isolates were previously recorded within or partially within the area of potential effect (APE). During the field survey, seven sites and one isolate were found within the APE. Three of these appear to be eligible for listing in the National Register of Historic Places, and thus meet the definition of "historic properties" under Section 106. They include: 1) prehistoric rock cairn field, 2) prehistoric bedrock milling feature with light scatter of artifacts, and 3) prehistoric rock art panels with artifact scatter and historic-period graffiti. Another site, consisting of a prehistoric bedrock milling feature, demonstrates the potential to be eligible for listing, but cannot be evaluated on the basis of surface observations alone. Further archaeological investigations would be necessary to adequately determine its significance.

Archaeological sites within or adjacent to federal lands, easements or rights-of-way are included in the above referenced resource sites. These include previously identified cairns sites on BLM lands in the northern portion of Section 18 and adjacent to the south boundary of the Tradition development, and another located immediately northwest of the western "peninsula" of the Quarry golf course in the south half of Section 19. Two other sites in Section 19 consisting of scattered ceramic sherds were reported by existing records to have been disturbed or removed. If the Alternative C fence alignment is selected for construction, an intensive survey in conjunction with establishing the final fence alignment would be appropriate to avoid impacts to any remaining resources.

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<sup>25</sup> Ibid.

<sup>26</sup> Ibid.



### 3.4.2 Environmental Consequences

As with other considered resources and potential project impacts, Reclamation and the BLM assess the potential impacts to the project as a whole. Potential impacts to historical and archaeological (prehistorical) resources were also considered in their entirety in the Draft EIR prepared by the CVCC. While Reclamation and BLM are specifically responsible for mitigation of impacts to these resources occurring on federal lands, their overarching responsibility to these resources is also assumed for those occurring on non-federal lands.

No Action – Under the No Action Alternative, no project would be constructed. The current status of the sites identified in the cultural resources survey report would continue.

#### Proposed Action

Alternative A: Five historic resource sites have been identified along, within, or in proximity to the Alternative A APE. Three of the sites are outside the APE and will not be impacted by the proposed action. The other two sites do not qualify as historic properties under Section 106; however, due to the overall sensitivity of the sites to harbor sensitive cultural resources, construction monitoring in those areas where historic resources have been identified along the APE is recommended.

Five archaeological resource sites have been identified along, within, or in proximity to the Alternative A APE. Construction of Alternative A has the potential to physically impact four of the resources, all of which appear eligible or potentially eligible for listing in the National Register of Historic Places, and thus meet the definition of “historic properties” under Section 106. The fifth site does not qualify as an historic property under Section 106; however, due to the overall sensitivity of the site to harbor sensitive cultural resources, construction monitoring in those areas where historic resources have been identified along the APE is recommended.

Alternative A2: Under the A2 refinement of Alternative A, the fence will turn west into rising terrain west of the Coachella Canal, and will proceed in a southwesterly direction onto CVWD land and toward two water storage tanks. It will proceed southerly along the west side of the ridge and rejoin the original Alternative A alignment in the vicinity of the County Sheriff’s shooting range. Cultural resource surveys conducted for the two Cahuilla II water storage tanks west of the A2 alignment identified rock cairns farther west on alluvial fans that once led to the edge of ancient Lake Cahuilla. The A2 alignment segment would not encroach into these previously identified and mapped resources.

Alternative B: The same five historic resource sites identified along, within, or in proximity to the Alternative A APE also occur along the Alternative B APE. Three of the sites are outside the Alternative B APE and will not be impacted by the proposed action. The

other two sites do not qualify as historic properties under Section 106, and will not be impacted by the proposed action due to sufficient distance from the proposed fence alignment.

The same five archaeological resource sites identified along, within, or in proximity to the Alternative A APE also occur along the Alternative B APE. As with Alternative A, construction of Alternative B has the potential to physically impact four of the resources, all of which appear eligible or potentially eligible for listing in the National Register of Historic Places, and thus meet the definition of “historic properties” under Section 106. The fifth site does not qualify as a historic property under Section 106; however, due to the overall sensitivity of the site to harbor sensitive cultural resources, construction monitoring in those areas where historic resources have been identified along the APE is recommended.

Alternative B2: The B2 (Public Lands Only) Alternative would avoid several historic resource sites identified along, within, or in proximity to the Alternative A APE and also occur along the Alternative B APE. Three of the sites are outside the Alternative B2 APE and will not be impacted by the proposed action. The other two sites do not qualify as historic properties under Section 106, and will not be impacted by the proposed action due to the provision of sufficient distance from the proposed fence alignment.

The B2 Alternative would also affect or have the potential to affect fewer archaeological resource sites identified along, avoiding those located near the southeast portion of the SilverRock Resort property, and one located in the western portion of the Tradition development. As with Alternatives A and B, resource sites located along the southern border of the Tradition development will need to be protected and impacts avoided through refinements to fence alignment and construction monitoring.

As with Alternatives A and B, construction of Alternative B2 has the potential to physically impact three of the resources, all of which appear eligible or potentially eligible for listing in the National Register of Historic Places, and thus meet the definition of “historic properties” under Section 106. The fourth site does not qualify as a historic property under Section 106; however, due to the overall sensitivity of the site to harbor sensitive cultural resources, construction monitoring in those areas where historic resources have been identified along the APE is recommended.

Alternative C: Three previously recorded historic resource sites were identified along, within, or in proximity to the Alternative C APE. Two of the sites will not be impacted by the proposed action due to distance from the proposed fence alignment; however, due to the relative potential of the planning area to harbor sensitive cultural resources, construction monitoring in those areas where historic resources have been identified along the APE is recommended. The third site is outside the Alternative C APE, and the resources were removed in conjunction with an earlier development project.

Five archaeological resource sites were identified along, within, or in proximity to the Alternative C APE. Construction of Alternative C has the potential to impact four of the sites; however, adjustment of the fence route could avoid the sites and minimize impacts. The fifth site has been disturbed to some extent and is subject to ongoing impacts from authorized trail use in the area, and impacts from the proposed action are not expected to be substantial.

### **3.4.3 Management and Mitigation Measures**

The following mitigation measures would apply.

No Action – No mitigation measures are proposed.

#### Proposed Action

In accordance with 36 CFR part 800.5, Reclamation has applied the criteria of adverse effect to historic properties to determine if the proposed Action would directly or indirectly alter any of the characteristics of historic properties that qualify them for inclusion in the NRHP. Based on the findings set forth in the cultural resource assessments conducted for this and related projects, the following mitigation measures will serve to reduce potential project impacts to levels that are less than significant.

Alternatives A and A2:

- CUL-1 Project impacts to Sites 33-024893, 33-024894 and 33-002826 could be potentially significant, given the substantial archaeological discoveries in and near the APE. Therefore, archaeological monitoring shall be implemented during ground-disturbing activities in the area of these sites in coordination with the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians. The monitor shall be authorized to stop ground disturbance or other construction activities in proximity to potential resources. The responsible federal land manager shall be contacted and consulted to initiate data recovery excavations and/or detailed recordation of archaeological features before construction can resume at this location.
- CUL-2 In order to avoid impacts to Site 33-000626, the Alternative A fence alignment in this area shall remain outside or at most on the edge of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-3 To avoid impacts to Site 33-002823, the Alternative A fence alignment in this area shall avoid and remain outside of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area. If physical impacts on this site cannot be avoided, a Phase II survey, data recovery excavations and/or detailed recordation of archaeological features, will be required and documentation completed before construction can begin in this location.



- CUL-4 Although the potential for significant impacts to Site 33-002826 is low, archaeological monitoring shall be implemented during ground-disturbing activities in the area of this site in coordination with the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians. The monitor shall be authorized to stop ground disturbance or other construction activities in proximity to potential resources. The responsible federal land manager shall be contacted and consulted to initiate data recovery excavations and/or detailed recordation of archaeological features before construction can resume at this location.
- CUL-5 To avoid impacts to Site 33-002827, the proposed Alternative A alignment in this area shall avoid this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area. The responsible federal land manager shall be contacted and consulted if physical impacts on this site cannot be avoided, and to determine whether a Phase II survey, data recovery excavations and/or detailed recordation of archaeological features will be required and documentation completed before construction can begin in this location.
- CUL-6 Should unknown archeological or tribal materials become unearthed, the qualified archeologist monitoring construction shall stop all ground disturbing activities in the area and prepare a findings report summarizing the methods and results of the monitoring program, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The report will also provide recommendations for eligibility for listing on the National Register of Historic Places. The report will be submitted to Reclamation, BLM, appropriate Tribes and responsible agencies, including the SHPO and appropriate THPO. Comments, if any, from these parties will be provided to the appropriate federal land manager. The mitigation of potential project impacts on cultural and tribal resources shall be determined in consultation with the appropriate Tribes.
- CUL-7 Should buried human remains be discovered on State controlled lands during project construction, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD). Reclamation and BLM shall work with the designated MLD to determine the final disposition of the remains. If buried human remains are discovered on federally controlled lands during project construction, in accordance with federal law, all ground disturbing work in the area must stop. The BLM archaeologist and Field Manager must be notified within 24 hours of the discovery and the BLM will be responsible for notifications.

- CUL-8 To avoid impacts to Site 33-019788, the proposed Alternative A alignment in this area shall be moved downslope to avoid this site, hugging the existing cart path at this location. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-9 In the unlikely event paleontological resources are encountered on federal land, the cultural resources monitor shall, upon discovery of any fossils, stop ground disturbing work and contact the responsible federal land manager. The federal land manager shall contact and coordinate with a qualified paleontologist to record and remove fossils and samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.

Alternative B:

- CUL-1 To mitigate potential impacts to Sites 33-024893, 33-024894 and 33-002826, archaeological monitoring shall be implemented during ground-disturbing activities in the area of these sites in coordination with the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians. The monitor shall be authorized to stop ground disturbance or other construction activities in proximity to potential resources. The responsible federal land manager shall be contacted and consulted to initiate data recovery excavations and/or detailed recordation of archaeological features before construction can resume at this location.
- CUL-2 In order to avoid impacts to Site 33-000626, the Alternative B fence alignment in this area shall hug the existing cart path and remain outside or at most on the edge of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-3 To avoid impacts to Site 33-002823, the Alternative B fence alignment in this area shall avoid and remain outside of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area. If physical impacts on this site cannot be avoided, a Phase II survey, data recovery excavations and/or detailed recordation of archaeological features, will be required and documentation completed before construction can begin in this location.
- CUL-4 To mitigate potential impacts to Site 33-002826 to less than significant, archaeological monitoring shall be implemented during ground-disturbing activities in the area of this site in coordination with the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians. The monitor shall be authorized to stop ground disturbance or other construction activities in proximity to potential resources. The responsible federal land manager shall be contacted and consulted to initiate data recovery excavations and/or detailed recordation of archaeological features before construction can resume at this location.

- CUL-5 To avoid impacts to Site 33-002827 the proposed Alternative B alignment in this area shall be moved upslope to avoid this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area. The responsible federal land manager shall be contracted and consulted if physical impacts on this site cannot be avoided, and to determine whether a Phase II survey, data recovery excavations and/or detailed recordation of archaeological features will be required and documentation completed before construction can begin in this location.
- CUL-6 Should unknown archeological or tribal materials become unearthed, the qualified archeologist monitoring construction shall stop all ground disturbing activities in the area and prepare a findings report summarizing the methods and results of the monitoring program, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The report will also provide recommendations for eligibility for listing on the National Register of Historic Places. The report will be submitted to Reclamation, BLM, appropriate Tribes and responsible agencies, including the SHPO and appropriate THPO. Comments, if any, from these parties will be provided to the appropriate land manager. The mitigation of potential project impacts on cultural and tribal resources shall be determined in consultation with the appropriate Tribes.
- CUL-7 Should buried human remains be discovered on State controlled lands during project construction, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD). BLM and Reclamation shall work with the designated MLD to determine the final disposition of the remains. If buried human remains are discovered on federally controlled lands during project construction, in accordance with federal law, all ground disturbing work in the area must stop. The BLM archaeologist and Field Manager must be notified within 24 hours of the discovery and the BLM will be responsible for notifications.
- CUL-8 To avoid impacts to Site 33-019788, the proposed Alternative B alignment in this area, near the existing CVWD fence, shall extend a short distance along the toe-of-slope to the northwest and away from this site before proceeding into steeper mountainous terrain. An archaeological monitor shall be present when the final alignment is determined.
- CUL-9 In the unlikely event paleontological resources are encountered on federal land, the cultural resources monitor shall, upon discovery of any fossils, stop ground disturbing work and contact the responsible federal land manager. The federal land manager shall contact and coordinate with a qualified paleontologist to record and remove fossils and samples of sediments that are

likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.

Alternative B2:

- CUL-1 In order to avoid impacts to Site 33-000626, the Alternative B2 fence alignment in this area shall remain outside or at most on the edge of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-2 To avoid impacts to Site 33-002823, the Alternative B2 fence alignment in this area shall avoid and remain outside of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area. The federal land manager shall be contacted if physical impacts on this site cannot be avoided, and to determine whether a Phase II survey, data recovery excavations and/or detailed recordation of archaeological features will be required and documentation completed before construction can begin in this location.
- CUL-3 Should unknown archeological or tribal materials become unearthed, the qualified archeologist monitoring construction shall stop all ground disturbing activities in the area and prepare a findings report summarizing the methods and results of the monitoring program, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The report will also provide recommendations for eligibility for listing on the National Register of Historic Places. The report will be submitted to Reclamation, BLM, appropriate Tribes and responsible agencies, including the SHPO and appropriate THPO. Comments, if any, from these parties will be provided to the appropriate federal land manager. The mitigation of potential project impacts on cultural and tribal resources shall be determined in consultation with the appropriate Tribes.
- CUL-4 Should buried human remains be discovered on State controlled lands during project construction, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD). BLM and Reclamation shall work with the designated MLD to determine the final disposition of the remains. If buried human remains are discovered on federally controlled lands during project construction, in accordance with federal law, all ground disturbing work in the area must stop. The BLM archaeologist and Field Manager must be notified within 24 hours of the discovery and the BLM will be responsible for notifications.
- CUL-5 In the unlikely event paleontological resources are encountered on federal

land, the cultural resources monitor shall, upon discovery of any fossils, stop ground disturbing work and contact the responsible federal land manager. The federal land manager shall contact and coordinate with a qualified paleontologist to remove fossils and samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.

Alternative C:

- CUL-1 Although previous field surveys and assessments have well-documented the occurrence of cultural resources along the Alternative C alignment, a final alignment pre-construction survey shall be conducted to revisit previously identified sites, observe for others along the alignment, and establish the final alignments in a manner that avoids impacts to cultural resources.
- CUL-2 To ensure impacts to Site 33-000627 are less than significant, the project archaeologist or qualified monitor shall be present to establish the final alignment and during fence construction in this area to ensure that impacts to resources associated with this site are avoided.
- CUL-3 In order to avoid impacts to Site 33-000626, the Alternative C fence alignment in this area shall be adjusted to the southwest and remain outside or at most on the edge of this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-4 In order to avoid impacts to Site 33-016202, the Alternative C alignment shall be adjusted to locate the fence farther south of its current approximate alignment sufficient to avoid impacts to this site. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-5 To avoid impacts to Sites 33-012977 and 33-012978, minor adjustments to the fence alignment shall be made at these locations sufficient to avoid impacts to these resources if they are still intact. An archaeological monitor shall be present when the final alignment is determined and the fence constructed in this area.
- CUL-6 Should unknown archeological or tribal materials become unearthed, the qualified archeologist monitoring construction shall stop all ground disturbing activities in the area and prepare a findings report summarizing the methods and results of the monitoring program, including an itemized inventory and a detailed analysis of recovered artifacts upon completion of the field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The report will also provide recommendations for eligibility for listing on the National Register of Historic Places. The report will be submitted to the BLM, Reclamation, appropriate Tribes and responsible agencies, including the SHPO and appropriate THPO. Comments,



if any, from these parties will be provided to the appropriate federal land manager. The mitigation of potential impacts on cultural and tribal resources shall be determined in consultation with the appropriate Tribes.

CUL-7 Should buried human remains be discovered on State controlled lands during project construction, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD). BLM and Reclamation shall work with the designated MLD to determine the final disposition of the remains. If buried human remains are discovered on federally controlled lands during project construction, in accordance with federal law, all ground disturbing work in the area must stop. The BLM archaeologist and Field Manager must be notified within 24 hours of the discovery and the BLM will be responsible for notifications.

CUL-8 In the event paleontological resources are encountered on federal land, the cultural resources monitor shall, upon discovery of any fossils, stop ground disturbing work and contact the responsible federal land manager. The federal land manager shall contact and coordinate with a qualified paleontologist to remove fossils and samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have the authority to temporarily halt or divert grading and excavation equipment to allow for removal of abundant or large specimens.

## **3.5 Indian Trust Assets**

### **3.5.1 Affected Environment**

Indian Trust Assets (ITAs) are legal interests in property held in trust by the U.S. for Indian tribes or individuals, or property in which the U.S. is charged by law to protect for Indian tribes or individuals. In accordance with the Indian Trusts Fund Management Reform Act of 1994, as amended, all the Department of the Interior agencies, including Reclamation and BLM, are responsible for protecting ITAs from adverse impacts resulting from their programs and activities. In cooperation with tribes, federal agencies must inventory and evaluate assets, and mitigate or compensate for adverse impacts to the asset. While most ITAs are located on reservation lands, they may also be located off-reservation. Examples of ITAs include, but are not limited to, land, minerals, rights to hunt, fish, and gather, and water rights.

#### **Trust Lands**

The project site, including associated federal lands, does not contain trust lands, and there are no tribal reservations, rancherias, or allotments in the project area. This area and much of the Coachella Valley is considered by local Tribes, including the Torres-Martinez, Augustine, Cabazon, Twenty-nine Palms and Agua Caliente (among others), to be a part of their traditional use area. The nearest tribal lands are the

Torres Martinez Desert Cahuilla Indians Reservation, approximately 2.5 miles southeast of the project area.

### **Water Rights**

The project area does not contain water resources that are subject to water rights.

### **Hunting, Fishing, and Gathering Rights**

No portion of the project area is subject to Native American hunting, fishing, or gathering rights.

## **3.5.2 Environmental Consequences**

Reclamation and BLM departmental policy requires the agency to address potential impacts to ITAs even if impacts are found to be non-significant.

No Action – Under the No Action Alternative, no project would be constructed. No changes to Indian Trust Assets would occur.

### Proposed Action

Alternative A: No ITAs have been identified in the project area, and therefore, no impacts to ITAs will occur.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **3.5.3 Management and Mitigation Measures**

No mitigation measures are proposed.

## **3.6 Environmental Justice and Socio-Economic Conditions**

### **3.6.1 Affected Environment**

Executive Order (EO) 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the U.S.

Minority populations include all persons identified by the Census of Population and Housing to be of Hispanic or Latino Origin, as well as non-Hispanic persons who are African American, American Indian and Alaska Native, Native Hawaiian or other Pacific Islander.

Low-income populations are those that fall within the annual statistical poverty thresholds from the Bureau of the Census for the 2010 Census. The definition of poverty is dependent on the size of the family. For example, the poverty threshold for a family of three is \$17,374, whereas \$22,314 is the threshold for a family of four (US Census Bureau, 2010). If the total income of a person's family is less than the threshold appropriate for that family size, then the person's income is considered as being below the poverty level.

The Coachella Valley is a rapidly growing region; its population increased 8.2% between 2010 and 2016, from approximately 323,445 residents in 2010 to 409,045 in 2016.<sup>27 28</sup> The City of La Quinta, in which the project area is located, has also experienced strong growth. Between 2010 and 2016, its population increased 6.7%, from 37,467 residents to 39,977.<sup>29</sup> According to the 2015 American Community Survey, the median age in La Quinta is 45.7 years. The majority (80.4%) of city residents describe themselves as "one race: white," with 33.2% identifying themselves as "Hispanic or Latino (of any race). The city contains 24,125 housing units, 63.0% of which are occupied, and 37.0% of which are vacant. The average household size of owner-occupied units is 2.42 persons per household, and the average household size of renter-occupied units is 2.96. The median value of owner-occupied units is \$349,400.

Abutting portions of the project area are three private residential communities containing hundreds of homes: Tradition Golf Club, PGA West, and the Quarry (see Figures 6 through 9). Northeast of the project area is SilverRock Resort, which is currently developed with only one golf course but at buildout could accommodate 850 hotel and residential units.<sup>30</sup> West of the project area is the La Quinta Cove community, which contains thousands of residences. The project area is separated from La Quinta Cove homes by Avenida Bermudas. There are no residences, or socially or economically disadvantaged populations, within or adjacent to BLM or Reclamation lands associated with or in an area of influence of the project.

The Project will not displace existing housing or people or require the construction of replacement housing elsewhere. It does not propose new housing, will not attract new residents to the area, and will not result in the construction of new roads or infrastructure that could induce future population growth, such as water or sewer extensions.

Population and demographic data for the City of La Quinta and Riverside County are provided in Table 10. No minority or low-income communities exist in the project area; therefore, none are expected to be affected in a disproportionate way by the proposed action.

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<sup>27</sup> 2010 U.S. Census; Table E-1, City/County Population Estimates with Annual Percent Change, January 1, 2015 and 2016, California Department of Finance.

<sup>28</sup> 2015 American Community Survey Estimate, US Census. Includes estimated population of 32,823 in unincorporated areas of the Coachella Valley in 2015.

<sup>29</sup> Ibid.

<sup>30</sup> Exhibit 2, Revised Master Plan for SilverRock Specific Plan, July 16, 2014.

**Table 10**  
**Population, Minority, and Poverty Data**  
**for the City of La Quinta and Riverside County**

<b>Location</b>	<b>Total Population</b>	<b>Percent Minority</b>	<b>Percent Population Living Below Poverty Level</b>
La Quinta, CA	37,467	32%	9.6%
Riverside County, CA	2,189,641	53%	16.9%

Source: US Census Bureau, 2010.

### 3.6.2 Environmental Consequences

No Action – Under this alternative, no project would be constructed. No changes would occur that could result in disproportionately high or adverse effects on the health or environment of minority or low-income populations either within or in proximity to project-related federal lands.

#### Proposed Action

Alternative A: Based on the air quality, water resources, and hazardous materials analyses in this EA, implementation of Alternative A would not disproportionately affect the environment or health of minority or impoverished populations in the area. Neither are there such populations either within or in proximity to project-related federal lands.

Alternative A2: Based on the air quality, water resources, and hazardous materials analyses in this EA, implementation of Alternative A2 would not disproportionately affect the environment or health of minority or impoverished populations in the area. Neither are there such populations either within or in proximity to project-related federal lands.

Alternative B: Based on the air quality, water resources, and hazardous materials analyses in this EA, implementation of Alternative B would not disproportionately affect the environment or health of minority or impoverished populations in the area. Neither are there such populations either within or in proximity to project-related federal lands.

Alternative B2: Based on the air quality, water resources, and hazardous materials analyses in this EA, implementation of Alternative B2 would not disproportionately affect the environment or health of minority or impoverished populations in the area. Neither are there such populations either within or in proximity to project-related federal lands.

Alternative C: Based on the air quality, water resources, and hazardous materials analyses in this EA, implementation of Alternative C would not disproportionately affect the environment or health of minority or impoverished populations in the area. Neither are there such populations either within or in proximity to project-related federal lands.



### **3.6.3 Management and Mitigation Measures**

No mitigation measures are proposed.

## **3.7 Hazardous Materials or Solid Waste**

### **3.7.1 Affected Environment**

No hazardous materials sites or hazardous solid waste disposal sites have been identified within or adjacent to BLM or Reclamation lands associated with the project. Outside of and beyond project-related federal lands, three (3) closed leaking underground storage tank (LUST) cleanup sites are within the golf course communities in the project area. In each case, corrective action was taken, and the cases have been closed for many years. Currently, gasoline and various fertilizers, pesticides and related chemicals are stored and used for turf management at nearby golf courses. No other hazardous materials are used or stored in proximity to the project area.

### **3.7.2 Environmental Consequences**

No Action – Under the No Action Alternative, no project would be built, and no change to hazardous materials in the project area would occur.

#### Proposed Action

Alternative A: Alternative A will involve the delivery and use of fencing materials, concrete, and hand-driven and/or lightweight motor-operated tools, as well as the use of trucks, carts, and helicopters. Two equipment and materials staging areas have been identified for this project, one on a CVWD well site located in the upper La Quinta Cove and another on Reclamation lands located on highly disturbed lands in the northwest quarter of Section 20 north of Lake Cahuilla. Limited helicopter and motor vehicle service and maintenance could occur at pre-approved staging areas. Most equipment maintenance would occur off-site. Only small quantities of fuels and lubricants would be brought to the project site, and their use can be well controlled. The project would generate very little solid waste, primarily consisting of excess fence materials.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

### **3.7.3 Management and Mitigation Measures**

No mitigation measures are proposed, as no significant project impacts associated with hazardous materials are anticipated.

## **3.8 Noise**

### **3.8.1 Affected Environment**

The noise environment in the project area is quiet. Virtually no noise is emitted from the slopes of the Santa Rosa Mountains. Noise on the valley floor is limited to that generated at nearby golf courses and residential development and includes low-speed vehicular traffic and typical landscape maintenance equipment. BLM lands are all within the Santa Rosa and San Jacinto Mountains National Monument; portions of BLM lands within and adjacent to the project area are part of the Santa Rosa Wilderness Area. On project-related Reclamation lands, canal operations currently generate very limited and essentially de minimis noise levels.

Sensitive receptors in the project vicinity include residences at Tradition Golf Club, PGA West, and the Quarry, as well as campsites at Lake Cahuilla Recreation Area. The County Sheriff's Firing Range located immediately northeast of Lake Cahuilla is isolated against a spur of the foothills and away from county park use areas. No other sensitive receptors, such as schools or hospitals, are located in the area.

### **3.8.2 Environmental Consequences**

No Action – Under the No Action Alternative, no project would be built, and no changes to the existing noise environment would occur. Current noise levels would continue.

#### Proposed Action

Alternative A: During construction, noise would be generated by hand tools, rock drills and similar equipment, as well as motor vehicle and occasional helicopter use in the project area. At 200 feet, helicopter noise levels would drop  $6\pm$  dBA with every doubling of the distance between the source and receptor. At 800 feet, helicopter flyover noise levels would range from 56.2 to 69.4 EPNdB. Helicopter take-offs and landings in the project area will occur on the CVWD well site located in the upper La Quinta cove and approximately 0.3 miles from the nearest sensitive receptor. In the vicinity of Lake Cahuilla, helicopter take-offs and landings may also be conducted on the staging area located on highly disturbed Reclamation lands north of Lake Cahuilla and in the vicinity of the County Sheriff's firing range and approximately 1,500 feet from the nearest use area associated with the Lake Cahuilla Park.

By adherence to mitigation measures below all sensitive receptors will be well beyond this distance during helicopter flyovers. Noise may be an annoyance to sensitive receptors in proximity to the source; however, project-related noise will be intermittent, temporary, and physically removed from sensitive receptors to the extent practicable. Over the long-term, routine inspections and occasional repairs could generate similar noise levels, but they would be limited to isolated locations where repairs are needed and less likely to involve the use of helicopters. No permanent noise increases would occur as a result of the project.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

### **3.8.3 Management and Mitigation Measures**

The following mitigation measures are recommended.

Alternative A:

- N-1 Project construction activities shall only occur between the permitted hours of the La Quinta Municipal Code. The project construction supervisor shall ensure compliance. This measure will serve to protect any sensitive BLM or Reclamation lands from significant noise impacts.
- N-2 During all project site construction, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction supervisor shall place all stationary construction equipment so that emitted noise is directed away from the noise-sensitive receivers nearest the Project site.
- N-3 To the greatest extent practicable, the project construction supervisor shall limit the use of noise generating construction equipment in proximity to residences, and shall rely on hand tools to avoid or minimize noise impacts to these sensitive receptors.
- N-4 Prior to the initiation of helicopter flights, the construction supervisor shall coordinate with the helicopter operator and shall plan flight routes that minimize the exposure of local residents and park users to helicopter noise.
- N-5 The construction supervisor shall limit haul truck deliveries to the same hours specified for construction equipment by the La Quinta Municipal Code.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **3.9 Water Resources**

### **3.9.1 Affected Environment**

The Coachella Canal and its terminal reservoir, Lake Cahuilla, are the nearest sources of surface water to the project area. The canal is owned by Reclamation and is managed by CVWD. The Coachella Canal transports Colorado River water from the All-American Canal to Lake Cahuilla, where it is delivered to agricultural lands in the eastern Coachella Valley through underground pipelines.

The U.S. Army Corps of Engineers (USACE), under Section 404 of the Clean Water Act, regulates the discharge of discharge of dredged, excavated, or fill material in wetlands, streams, rivers, and other U.S. waters. BLM and Reclamation lands drain to impoundments located behind flood control dikes built and maintained by Reclamation and CVWD. There are no identified USACE jurisdictional waters in the project area.

### **3.9.2 Environmental Consequences**

No Action – Under this alternative, no project would be built, and no impacts to surface water or jurisdictional waters would occur.

#### Proposed Action

Alternatives A and A2: Alternative A's impacts on water resources will be minimal. During construction, the project will use limited quantities of water for mixing concrete for the purpose of securing fence posts, as well as for dust mitigation at staging areas. The CVWD is expected to be the source of water via its local system of wells, reservoirs and distribution lines. Under this alternative, approximately 199,319 gallons (0.61± acre feet) would be used for project construction. During long-term operation of the barrier project no water will be required. The project will have no impact on water delivery operations in the project area, water quality, or surface water contained within Reclamation's Coachella Canal or Lake Cahuilla. Neither surface nor groundwater associated with BLM or Reclamation lands will be affected by the project. It will not result in the discharge or placement of dredged or fill material into jurisdictional waters.



Alternative B: Under this alternative, approximately 194,273 gallons (0.59± acre feet) would be used for project construction. Other potential impacts are the same as Alternative A, above.

Alternative B2: Under this alternative, approximately 167,852 gallons (0.51± acre feet) would be used for project construction. Other potential impacts are the same as Alternative A, above.

Alternative C: Under this alternative, approximately 188,693 gallons (0.57± acre feet) would be used for project construction. Other potential impacts are the same as Alternative A, above.

### **3.9.3 Management and Mitigation Measures**

No mitigation measures are proposed because neither project alternative would adversely impact water resources.

## **3.10 Geology and Soils**

### **3.10.1 Affected Environment**

The project area is located across the boundary of two geologic-geomorphic provinces: the Colorado Desert Province and Peninsula Ranges Province. It is generally bounded on the northeast by the Salton Sea Trough, the north and northeast by the San Andreas Fault Zone, and the southwest by the San Jacinto Fault Zone. The area is characterized by the foothills and slopes of the Santa Rosa Mountains that rise abruptly from the valley floor, as well as deep canyons and alluvial fans that emanate from the mountains.

Nearly all the terrain in the project area is 30% slope or greater, with the exception of the toe-of-slope areas where the slope is 15-25% until contact with the valley floor. This terrain is largely comprised of exposed bedrock and talus slope with very thin soil horizons where they do exist. The vast majority of the planning areas is “Rocky outcrop” (RO) and “Rubble land” (RU) with small areas of “Carrizo stony sand (CcC), and with sands and gravels of the Carsitas series along the toe of slope. The developed portions of the planning area are located on these Carsitas soils and consist of landscaped golf courses, Lake Cahuilla Recreation Area facilities, above-ground CVWD water reservoirs, single-family dwellings, golf course maintenance yards and facilities, and paved and unimproved roads, trails, golf cart paths, and bike paths.

The San Andreas Fault Zone is located approximately 7.6 to 10.25 miles northeast of the project area; it is capable of generating magnitude 7.2 earthquakes.<sup>31</sup> The San Jacinto Fault Zone lies 20± miles to the southwest; both are capable of generating moderate to severe ground shaking in the project area. Some portions of the project area are moderately to highly susceptible to slope instability, including the potential for soil slumps, soil block slides, and rock falls. The majority of the project area is also highly

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<sup>31</sup> Technical Background Report to the Safety Element of the La Quinta General Plan, Earth Consultants International. 2010.

or very highly susceptible to wind erosion. Subsidence, which involves the settling or sinking of the ground surface, has been documented on the valley floor within approximately ½-mile of the project area, but does not affect the immediate project area.

### **3.10.2 Environmental Consequences**

No Action – Under this alternative, no changes to soils, geologic resources, or geologic hazards would occur.

#### Proposed Action

Alternative A: During construction, ground surface disturbances would be limited to digging holes for fence posts, occasional relocation and/or drilling of rocks that are within the immediate path of the fence and impede its installation, incidental disturbance from construction crew foot travel, and generation of blowing sand associated with helicopter operations. During long-term operation of the project, similar soil disturbances would be expected only when occasional repairs are required.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

### **3.10.3 Management and Mitigation Measures**

No mitigation measures are proposed.

## **3.11 Visual Resources**

### **3.11.1 Affected Environment**

Visual resources include natural and manmade features that give a particular environment its aesthetic qualities. Landscape character is evaluated to assess whether the project will appear compatible with existing features or would contrast noticeably with the setting and appear out of place. Visual sensitivity includes public values, goals, awareness, and concern regarding visual quality.

The project area includes the margin of the valley floor and the abutting rocky foothills and slopes of the Santa Rosa Mountains, with elevations generally ranging from sea level at the northern banks of Lake Cahuilla to approximately 1,600 feet above mean sea level at the highest peak south of the Tradition Golf Club. The open space of the mountains and alluvial fans provides a dramatic backdrop and sharp contrast to the adjacent low-lying valley floor that, in much of the project area, is developed with landscaped, manicured golf courses. The valley floor also includes residential development, recreational

campsites and improvements at Lake Cahuilla Recreation Area, portions of Reclamation's concrete-lined Coachella Canal, the existing CVWD PBS exclusion fence along the toe-of-slope in the vicinity of SilverRock Resort and PGA West, and the recently constructed PBS exclusion fence along the toe-of-slope at SilverRock Resort.

### **3.11.2 Environmental Consequences**

No Action – Under the No Action Alternative, no changes to visual resources would occur.

#### Proposed Action

Alternative A: Alternative A will result in the construction of 12,005± linear feet of fencing on or contiguous to BLM lands and 3,100 linear feet on Reclamation lands. Overall, Alternative A will result in the construction of continuous fence that is 67,277± feet (12.74 miles) long, including the segment installed in March 2017 along the SilverRock golf course. The fence will be 8 feet high (although additional height may be needed where steep slopes or other topographic features, such as boulders and ridges, adjacent to the fence could allow sheep to jump over the fence). The fence would be built of chain link, wrought iron, or welded steel, or a combination thereof depending on the sensitivity of adjacent land uses and anticipated viewer response. The fence will include pedestrian and vehicle gates, where determined necessary in consultation with appropriate agencies and property owners. Flapper gates will be installed at the bottom of the fence at designated locations to allow runoff and debris to be swept under the fence during large storm events. Construction will occur during daytime hours in accordance with local ordinances, and no new sources of light will be introduced.

On project-related Reclamation lands, the proposed action will place fencing along the mountain side of the Coachella Canal and north of the PGA West golf course in this area, comparable to the fencing built by CVWD along the canal to the immediate north. The fence would also cross Reclamation lands in the vicinity of Lake Cahuilla. Fencing on BLM lands would be along the toe of slope just west of Lake Cahuilla Recreation Area and along the west boundary of the Quarry golf course. In all cases, including on non-federal lands, Alternative A fencing will have no impact on mid-range or high-elevation scenic vistas. At lower elevations, it will result in the installation of a fence where none currently exists and will change the visual landscape, particularly for residents and golfers in proximity to the fence, including those at Tradition, SilverRock, PGA West, and the Quarry. It will also be visible to park and trail users at Lake Cahuilla Recreation Area. Fence colors will complement the natural environment and, in most locations, the fence will be back-dropped by desert terrain, which could minimize its visual mass and impact. Views of the fence from more distant locations will be less affected, and from many vantage points, the fence will be blocked by intervening terrain, vegetation, buildings, or boundary walls. The fence will connect to the existing CVWD PBS exclusion fence and the recently built PBS exclusion fence along the toe-of-slope west of SilverRock Resort and PGA West.

Alternative A2: Alternative A2 will result in the construction of 2,530± linear feet of fencing on or contiguous to Reclamation lands; no fencing will be built on BLM lands. The alignment will eliminate 5,391± feet of fencing immediately west of the canal in the vicinity of PGA West and replace it with 5,728± feet of fencing on the ridgeline to the west. Fence height and materials will be the same as described for Alternative A, above, as will the inclusion of pedestrian, vehicle, and flapper gates where necessary. Visual impacts in all locations will be the same as those described for Alternative A, except in the west-central portion of PGA West where the fence will be constructed on west side of the ridgeline approximately 1/3 mile farther west and out of view of residences and golfers at PGA West, resulting in considerably lower visual impacts in this area compared to Alternative A. The fence will not be noticeable or obtrusive to observers in these locations, except for the very limited area where it breaks the ridgeline. Construction would occur during permissible daytime hours, and no new lighting sources would be installed.

Alternative B: Alternative B will result in the construction of 8,369± linear feet of fencing on or contiguous to BLM lands and 2,712± linear feet on Reclamation lands. Overall, Alternative B will result in the construction of continuous fence that is 47,093± feet (12.74 miles) long, including the newly installed segment along the SilverRock Resort site. Alternative B will result in the construction of a continuous fence of the same height and materials described for Alternative A, above. It will also include pedestrian gates, vehicle gates, and flapper gates, where necessary. It would generally follow a similar alignment as Alternative A in the vicinity of Tradition and the Quarry, and visual impacts would be most noticeable to residents and golfers in close proximity at these locations. The visual mass of the fence will be reduced somewhat by its permeability and backdrop views of desert terrain that are visible through the fence openings.

In the vicinity of the Reclamation Coachella Canal and PGA West, Alternative B is proposed at higher elevations to minimize visual impacts to residents, golfers, and other viewers. Impacts to BLM lands would be the same as those for Alternative A. Except where it breaks the ridgeline, the fence will not be noticeable or obtrusive to observers at these locations, and the overall character of the area will not change substantially. Alternative B will directly connect to the south end of the existing CVWD PBS exclusion fence along the toe-of-slope west of SilverRock and PGA West. Construction would occur during permissible daytime hours, and no new lighting sources would be installed.

Alternative B2: Alternative B2 will result in the construction of 12,539± linear feet of fencing on or contiguous to BLM lands and 3,547± linear feet on Reclamation lands. Overall, Alternative B2 will result in the construction of continuous fence that is 40,706± feet (8.9 miles) long, including the newly installed segment along the SilverRock Resort site.



Alternative B2 will result in the construction of a continuous fence of the same height and materials described for Alternative A, above. It will also include pedestrian gates, vehicle gates, and flapper gates, where necessary. Under Alternative B2, the fence alignment in the northern portion of the planning area would be placed along the boundary of BLM lands on the north and east section lines of Section 18. Otherwise, Alternative B2 would occur on the same BLM lands as those described in Alternatives A and B.

With regard to potential visual effects associated with fence construction on Reclamation lands, Alternative B2 would not occur along the Coachella Canal beyond that segment built by CVWD in 2014. Reclamation lands in the vicinity of Lake Cahuilla would host the fence in the same locations set forth in Alternatives A and B, described above.

The visual mass of the fence will be reduced somewhat by its permeability and backdrop views of desert terrain that are visible through the fence openings. Except where it breaks the ridgeline, the fence will not be noticeable or obtrusive to observers at these locations, and the overall character of the area will not change substantially. Construction would occur during permissible daytime hours, and no new lighting sources would be installed.

Alternative C: Alternative C will result in the construction of a continuous fence of the same height and materials described for Alternatives A and B, above. It will also include pedestrian gates, vehicle gates, and flapper gates, where necessary. The Alternative C fence will be 24,773± feet long extending between the southwestern property boundary of Tradition Golf Club to the southeastern boundary of the Quarry Golf Club, generally following the Cove to Lake Trail through the saddle between the Santa Rosa Mountains and Coral Mountains.

Of the three proposed action alternatives, Alternative C would expose the fewest residents and golfers to visual impacts. It completely avoids Tradition, SilverRock, PGA West, and Lake Cahuilla Recreation Area (although it may be visible to a few residents near the southwest corner of Tradition). It would be most visible to trail users along the Cove to Lake Trail and residents and golfers at the Quarry. The permeability of the fence and the ability of background terrain to show through the fence openings may reduce its visual mass and impacts. Where the fence parallels Avenida Bermudas, vehicle drivers in the vicinity will be highly focused on negotiating traffic, and it is anticipated they will experience low levels of sensitivity to the fence. Views of the fence by residents west of Avenida Bermudas will be tempered by distance, visually rich backgrounds, and dramatically rising terrain, and the landscape will continue to dominate viewsheds in this vicinity. Alternative C will not connect to the existing CVWD PBS exclusion fence or the PBS exclusion fence at SilverRock Resort. Construction of Alternative C will occur during permissible daytime hours, and no new lighting will be installed.

### **3.11.3 Management and Mitigation Measures**

No mitigation measures are proposed.

## **3.12 Floodplain**

### **3.12.1 Affected Environment**

Runoff from the Santa Rosa Mountains emanates from relatively small and widely dispersed drainages, which have the potential to generate high rates of runoff in a short period of time. Unaltered drainages include channelized streams, braided streams, and sheet flows. Drainage improvements in the project area include: 1) East La Quinta System, which transports along the southeastern edge of the Cove to the La Quinta Channel to the north; 2) Reclamation's Dikes 2 and 4 south and east of Lake Cahuilla, which protect Lake Cahuilla and agricultural and other land between Avenue 58 and Avenue 66; and 3) channels and detention basins that intercept and convey mountain and alluvial fan runoff through golf course and residential communities.

The National Flood Insurance Act of 1968 and Flood Disaster Protection Act of 1973 require that the Federal Emergency Management Agency (FEMA) evaluate flood hazards throughout the country. FEMA has developed Flood Insurance Rate Maps (FIRMs) to identify potential hazard areas. The majority of the project area is located in Flood Hazard Zone X (without pattern), which designates "Other Areas: areas determined to be outside the 0.2% annual floodplain (500-Year) and areas in which flood hazards are undetermined, but possible." Portions of the project area are adjacent to Zone X (with pattern), which represents "Other Flood Areas: areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood." These areas include the valley floor in the westerly portion of the Tradition development, northern portion of PGA West, and land south of The Quarry. In case of flooding, there are local drainages to convey the runoff to the regional drainage facilities to accommodate the runoff and transfer it to storm channel.

A few portions of the planning area are designated as "A" and "AO" zones (100-year flood areas). These are primarily associated with developed stormwater detention basins, including those within the Tradition and Quarry developments. A small sliver of flood zone along the southwest edge of Lake Cahuilla Recreation Area and crossing the proposed fence alignment is designated AO; this sliver is associated with the stormwater impound area behind Reclamation Dike 2.

### **3.12.2 Environmental Consequences**

No Action – Under this alternative, no changes to hydrological patterns or conditions would occur.

### Proposed Action

Alternative A: Alternative A will not impact the integrity of stormwater improvements in the project area. Flapper gates will be installed in the lower portions of fence segments where determined necessary to facilitate the movement of stormwater and debris flows during larger storm events. These include BLM lands located between the Lake Cahuilla Recreation Area and the Quarry development where storm flows are focused.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

### **3.12.3 Management and Mitigation Measures**

No mitigation measures are proposed.

## **3.13 Cumulative Effects of the Proposed Action**

Cumulative effect is the impact on the environment that results from the incremental impacts of an action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or nonfederal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). Several former, current, and planned projects either located within or in the vicinity of the planning area and having the potential to impact common resources are addressed in this section.

### **SilverRock Resort**

SilverRock Resort is a 525-acre master planned property within and adjacent to the project area, which is currently being built out. The city-owned 18-hole Arnold Palmer Classic Golf Course was built in 2004 adjacent to the toe-of-slope. The SilverRock Resort Specific Plan<sup>32</sup> facilitates additional development, including a boutique hotel, resort hotel with spa and conference facilities, retail and mixed-use development, resort residential, and an additional 18-hole golf course. Buildout of the Specific Plan would result in the development of 65,000 square feet of commercial space and 850 hotel and residential units. Table 11 summarizes buildout land uses.

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<sup>32</sup> SilverRock Resort Specific Plan, City of La Quinta, July 18, 2006; revised 2014.

**Table 11**  
**SilverRock Specific Plan Buildout Summary**

<b>Land Use</b>	<b>Acres</b>	<b>Units</b>
Golf Course (existing)	173.0	
Luxury Hotel & Spa	17.0	140
Luxury Branded Residential	24.0	95
Shared Services/Conference	12.0	
Lifestyle Hotel	10.0	200
Promenade/Mixed Use Village	25.5	230
Resort Residential Village	32.0	160
New Golf Club & Holes	131.0	25
Public Park	35.0	
Trails, Canal & Streets	65.5	
<b>TOTAL:</b>	<b>525.0</b>	<b>850</b>
Source: Exhibit 2, Revised Master Plan for SilverRock Specific Plan, July 16, 2014.		

The next phases of development will involve construction of the luxury hotel, spa, conference and shared services facility, and 35 resort residential units. Hotel construction will require reconfiguration of part of the existing golf course, which was approved by City Council in January 2016 and is projected to start in 2017 and take 18 months.<sup>33</sup> A Site Development Permit for the hotel, conference, and residential projects was approved by the La Quinta Planning Commission on October 25, 2016. An appeal of the Planning Commission approval was filed by the Sierra Club and Center for Biological Diversity, referring to the condition placed on SilverRock to build a fence (see next paragraph). At a public hearing on the appeal before the City Council on December 20, 2016, the council authorized construction of a temporary sheep exclusion fence prior to a building permit or any construction at SilverRock. The fence was installed in March 2017.

The existing CVWD PBS sheep exclusion fence extends along the toe-of-slope in the southern portion of SilverRock. SilverRock is also conditioned to build a PBS exclusion fence if PBS enter the property:

*If Bighorn Sheep enter into the Project Site, an 8-foot fence (or the functional equivalent) between the development and the hillside shall be constructed. The gaps should be 11 centimeters (4.3 inches) or less. If determined necessary, the City shall construct temporary fencing while permanent fencing is constructed. The fence shall not contain gaps in which Bighorn Sheep can be entangled. If the Department transfers or disposes of any of the property adjacent to the hillside, the Department shall reserve an easement sufficient for the construction of fencing if needed in the future.<sup>34</sup>*

<sup>33</sup> Staff Report, La Quinta City Council Meetings February 24, 2016 and December 20, 2016; La Quinta Planning Commission, October 25, 2016.

<sup>34</sup> Page 3.0-37, SilverRock Resort Project Addendum to the Adopted Mitigated Negative Declaration, prepared for the City of La Quinta by Meridian Consultants, October 2014.



## **Coral Canyon**

Coral Canyon (Tentative Tract Map No. 33444) encompasses approximately 330± acres immediately south of the Quarry Golf Club. The TTM was approved in 2005 for 219 residential dwelling units on 78± acres, and 239± acres of open space. The residential portion of the project is planned for the easternmost portion of the property and will take direct access from the future Jefferson Street alignment. No construction plans for Coral Canyon have been approved yet.<sup>35</sup>

The Coral Canyon property includes designated critical habitat for PBS; upon development, 239± acres of critical habitat will be placed in permanent conservation. The project is also subject to the following mitigation measure which addresses future construction of a PBS exclusion fence:

*In the event PBS are found to be attracted to the residential site, a three-person committee shall be formed, consisting of a representative of the Homeowners' Association (HOA), a representative of the California Department of Fish and Wildlife (CDFW), and the Community Development Director. The purpose of the committee shall be to assess the need for a fence to keep Peninsular bighorn sheep from entering the project site. The committee shall monitor sheep activity through various means, including interviews with residents and visitors, and any available scientific data available and/or funded by the HOA. If bighorn sheep are seen on the project site, the committee shall require that the HOA, at its expense, construct an 8 foot fence along the property line between the project and the hillside. Gaps in the fence should be 11 centimeters or less. At the request of CDFW, temporary fencing may be required between the time that sheep are seen on the site and the time that permanent fencing is required. The committee shall exist for a period of 10 years, unless bighorn sheep are documented to no longer inhabit the Santa Rosa Mountains. At the end of 10 years, if any one member of the committee deems it necessary the committee shall continue, until such time as it is dissolved by a unanimous vote of all its members.*

### **3.13.1 Impacts by Resource**

#### **Land Use**

Alternative A: Alternative A would not change any land uses in the area, disrupt established land configurations, divide established communities, or conflict with land management policies in the project area. The Action would not adversely affect Reclamation's Coachella Canal, Lake Cahuilla or other Reclamation facilities in the area. The proposed action would connect to, and is consistent with the purpose, location and structure of the existing CVWD PBS exclusion fence in the vicinity of PGA West and the recently built PBS exclusion fence at SilverRock Resort. No land uses on or associated with BLM lands would be affected by this alternative. It is also consistent with the PBS exclusion fence conditioned for future construction at the Coral Canyon development south of the Quarry. Alternative A, in conjunction with the other actions, is not anticipated to have negative cumulative impacts to land use.

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<sup>35</sup> Jay Wu, Principal Planner, City of La Quinta, April 28, 2016.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Air Quality**

Alternative A: Air quality impacts are discussed in detail in Section 3.2, which demonstrates that project construction and operation will not significantly impact local or regional air quality, including that at or in proximity of Reclamation and BLM lands. Buildout of SilverRock and Coral Canyon can be expected to result in increased emissions during both the construction and operational phases, which contribute to the cumulative impacts to air quality. Implementation of Alternative A will result in minimal increased area emissions during construction, but given their limited and temporary nature, Alternative A emissions in combination with future emissions would not be expected to contribute to exceedances of ambient air quality standards. Alternative A will not generate any emissions during long-term operation (except minimal emissions during occasional repairs) and, therefore, its contribution to long-term air quality exceedances will be negligible.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Biological Resources**

Alternative A: Impacts to biological resources are discussed in detail in Section 3.3, which also quantifies the potential loss of PBS access to critically designated and other sheep habitat. Alternative A and the projects listed in Section 3.3 will result in construction of fences specifically designed to prevent PBS from accessing urban lands and urban-related hazards in the project area. The fences are consistent with applicable PBS management requirements, and their combined impacts to PBS are anticipated to be cumulatively beneficial.

Alternative A will also result in the long-term removal of PBS access to approximately 130.35 acres of potential habitat, none of which is designated as critical, and may impact the movement of other larger sensitive species. These impacts will be minimized through implementation of mitigation measures set forth in Section 3.3. Therefore, when considered in conjunction with other proposed projects described in Section 3.13, Alternative A is not anticipated to have negative cumulative impacts to biological resources.

Alternative A2: Impacts to biological resources under Alternative A2 would be largely the same as those described for Alternative A, above, except for an additional 111.60 acres of habitat that PBS would be unable to access. The loss of available sheep habitat would increase to 241.95± acres, none of which is designated as critical habitat. Impacts will be minimized through implementation of mitigation measures set forth in Section 3.3. Therefore, when considered in conjunction with other proposed projects described in Section 3.13, Alternative A2 is not anticipated to have negative cumulative impacts to biological resources.

Alternative B: Impacts to biological resources under the Alternative B scenario are largely the same as those associated with Alternative A, above, except for the amount of habitat that PBS would be unable to access. The loss of available sheep habitat increases to 422.62± acres, of which 14.46± acres are designated as critical habitat and are located on BLM lands.

Alternative B2: Impacts to biological resources under the Alternative B2 scenario are largely the same as those associated with Alternative A, above, except for the amount of habitat that PBS would be unable to access. The loss of available sheep habitat increases to 742.74± acres, of which 19.61± acres are designated as critical habitat and are located on BLM lands.

Alternative C: Impacts to biological resources under the Alternative C scenario are largely the same as those associated with Alternative A, above, except for the amount of habitat that PBS would be unable to access. The loss of available sheep habitat increases to 2,400.45± acres, of which 1,108.7± acres are designated as critical habitat and are located on BLM lands.

## **Cultural Resources**

Alternative A: Impacts to cultural resources are discussed in detail in Section 3.4, which also identifies sensitive historic and pre-historic cultural resource sites that could be impacted by project development. Alternative A is proposed in proximity to identified cultural resources, and there is a potential for unforeseen cultural resources to be discovered or damaged. None of the potentially impacted sites are located on Reclamation land, but several, as described in Section 3.4 and Appendix C, occur on or adjacent to BLM lands. A number of mitigation measures set forth in Section 3.4, including pre-construction surveys and “stop work” procedures, have been proposed to assure impacts to cultural resources are mitigated to acceptable levels. Therefore, Alternative A, in conjunction with other projects described in Section 3.13, would not result in significant cumulative impacts on cultural resources.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Indian Trust Assets**

Alternative A: There are no Indian Trust Assets or other resources of tribal concern in the project area, including any of the BLM or Reclamation lands. Alternative A will not result in significant impacts on ITAs or other tribal resources. Therefore, the proposed action, in combination with other projects described in Section 3.13, would not cause disproportionate cumulative effects on ITAs.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.



## **Environmental Justice and Socio-Economic Conditions**

Alternative A: Alternative A will not directly or indirectly displace persons or housing or induce substantial population growth in the area, and will have no effect on population, housing, or other socioeconomic issues or resources, including those located on BLM or Reclamation lands. In combination with other foreseeable projects described in Section 3.13, it is not expected to have a cumulatively significant impact on socioeconomics or minority or low-income populations.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C Same as Alternative A, above.

## **Hazardous Materials or Solid Waste**

Alternative A: The project site, including those portions on or in proximity to BLM and Reclamation lands, is not located in proximity of any known or suspected active hazardous waste sites. Future buildout of SilverRock and Coral Canyon could result in the storage and use of limited quantities of hazardous materials, such as vehicle fuels, golf course fertilizers and pesticides, and swimming pool chemicals, in the project area. However, potential risks would be minimized to less than significant levels through implementation of mitigation measures and adherence to applicable regulations. Disposal of any hazardous materials would be conducted in compliance with applicable regulations and would reduce the likelihood of potentially significant impacts. Alternative A's contribution to these risks will be minimal and limited to the presence of vehicle fuels and lubricants onsite during construction. Alternative A, in conjunction with the other actions described in Section 3.13, is not anticipated to have negative cumulative impacts related to hazardous materials in the project area.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Noise**

Alternative A: Alternative A will involve the use of hand-operated and other lightweight tools, helicopters, and a limited number of trucks during construction; however, noise impacts will be temporary and impacts to sensitive receptors in the project area will be minimized through the implementation of mitigation measures. Alternative A will generate virtually no noise during long-term operation (other than that associated with occasional repairs). Other projects described in Section 3.13 can be expected to generate substantially greater noise levels from grading and construction machinery and activities, which will be temporary and reduced through the implementation of mitigation measures. They will also generate long-term noise from increased traffic and site operations. With anticipated mitigation measures, Alternative A's cumulative contribution to the local noise environment will be less than significant.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Water Resources**

Alternative A: Alternative A will have no impact on surface or groundwater, water quality, or the delivery of water within the project area, including operations and waters associated with Reclamation facilities (Coachella Canal and Lake Cahuilla). It will require minimal quantities of water during construction, but will not require any water during long-term operation. In conjunction with other proposed projects described in Section 3.13, it would not result in cumulatively significant impacts to water resources.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Geology and Soils**

Alternative A: Alternative A will require no grading, and ground surface disturbances will be largely limited to digging fence post holes and occasional moving of rock from the immediate fence alignment. Therefore, in conjunction with the other actions described in Section

3.13, Alternative A is not anticipated to have negative cumulative impacts to geology and soils.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.

## **Visual Resources**

Alternative A: Alternative A will result in the construction of a new fence where none currently exists and will be most noticeable to residents, golfers, and trail users in close proximity. Visual impacts will be reduced, to some extent, by a color palette that will blend in with surrounding landscapes and its permeability that allows background terrain to show through. When viewed from greater distances, visual impacts of the fence will be less noticeable. The proposed action will not convert open spaces to urban uses or otherwise transform scenic vistas. It is visually consistent with the existing CVWD PBS sheep exclusion fence, SilverRock PBS exclusion fence, and that required during development of Coral Canyon. Alternative A, therefore, will not have substantial negative cumulative impacts on visual resources.

Alternative A2: Same as Alternative A, above, except near the west-central portion of PGA West where the fence is proposed on the west side of intervening terrain, approximately 1/3-mile further west than Alternative A and further removed from and out of sight of residences and the golf course. Impacts in this vicinity will be considerably less than those anticipated under Alternative A. Alternative A2 will not have substantial negative cumulative impacts on visual resources.

Alternative B: Same as Alternative A, above, although overall impacts to potential impacts to views from private lands (primarily from PGA West and northern portions of Tradition) would be further reduced.

Alternative B2: Same as Alternative B, above, although overall impacts would be to views from private lands (primarily from PGA West and northern portions of Tradition) would be further reduced.

Alternative C: Same as Alternative A, above but with limited impacts to users of the Cove to Lake Trail, golfers at the Quarry development, and residents in the southeast portion of the La Quinta Cove.

## **Floodplain**

Alternative A: Alternative A will not affect the integrity of stormwater facilities in the project area and will include flapper gates, where necessary, to facilitate the continued movement of stormwater and debris beneath the fence. Potential flapper gate locations on federal lands include the narrow drainage between the Lake Cahuilla Recreation Area and the Quarry development. In conjunction with buildout of SilverRock Resort and Coral Canyon, Alternative A will not produce significant cumulative impacts to floodplains or stormwater facilities.

Alternative A2: Same as Alternative A, above.

Alternative B: Same as Alternative A, above.

Alternative B2: Same as Alternative A, above.

Alternative C: Same as Alternative A, above.



## **4.0 Consultation, Coordination, and List of Preparers**

### **4.1 Agencies Consulted**

An electronic copy of this EA has been posted for public viewing on Reclamation's Yuma Area Office web site at <http://www.usbr.gov/lc/yuma/>. Paper copies of the Notice of Availability memorandum and EA were distributed to the following entities:

- U.S. Fish and Wildlife Service
  - Bureau of Land Management
  - California Department of Fish and Wildlife
  - Agua Caliente Band of Cahuilla Indians
  - Torres Martinez Desert Cahuilla Indians
  - Coachella Valley Water District
  - Riverside County Park and Open Space District
  - City of La Quinta
- Consultations with the State Historic Preservation Office, the Agua Caliente Band THPO, and the Torres-Martinez Band are ongoing under Section 106 of the NHPA (36 Part 800) for undertaking involving Federal facilities.

### **4.2 Surveys and Studies of the Project Area**

- "Peninsular Bighorn Sheep, Assessment of Sheep Use of Urban Lands and Effects of Proposed Bighorn Sheep Barrier in the La Quinta Area of the Coachella Valley," John D. Wehausen, Ph.D. July 11, 2016.
- "Biological Resources Assessment, Peninsular Bighorn Sheep Barrier Project," Amec Foster Wheeler Environment and Infrastructure. August 19, 2016.
- "Western Burrowing Owl Survey Report," Coachella Valley Conservation Commission. June 30, 2016.
- "Identification and Evaluation of Historic Properties, La Quinta Peninsular Bighorn Sheep Fence Project," CRM TECH. August 30, 2016 and "Addendum to Historical/Archaeological Resources Survey," CRM TECH. September 1, 2016.
- "Air Quality and Greenhouse Gas CalEEMod Version 2013.2.2 Outputs for La Quinta Peninsular Bighorn Sheep Barrier," Terra Nova Planning & Research, Inc. December 2016.

### **4.3 Required Permits**

Depending upon the selected alternative, a license or other access agreement will be required from Reclamation or the BLM to enter, cross or construct upon lands under the jurisdiction of these agencies. Encroachment permits will also be required from the Coachella Valley Water District in association with staging areas and possible fence locations. No other federal, tribal, state, or local permits are required for implementation of the proposed action.

## **4.4 Public Involvement Activities**

Due to the nature of the project and its potential effects on a wide range of interests and resources, the CVCC, on behalf of Reclamation, has been involved in numerous meetings, consultations, and hearings on the subject of the PBS barrier. These meetings have included private and public landholders and land management agencies, including Reclamation, BLM, the City of La Quinta, CVWD, private property owners and others. The following documents these consultation and public outreach efforts.

- CVCC Public Hearings on April 10, 2014; November 13, 2014; February 12, 2015; April 9, 2015; May 14, 2015; September 10, 2015; November 12, 2015; January 14, 2016; March 10, 2016; April 14, 2016; June 9, 2016; September 8, 2016; November 10, 2016; February 9, 2017; April 13, 2017; and June 8, 2017
- Public Scoping Meeting, City of La Quinta City Hall, March 10, 2016
- City of La Quinta City Council Study Session, March 1, 2016
- City of La Quinta SilverRock Fence City Council hearing, December 20, 2016; February 7, 2017; and May 2, 2017
- Tradition Golf Club meeting with USFWS, CDFW, CVCC and consultants, Spring 2016.
- Quarry Golf Club management meeting, November 2016; March 28, 2017; April 28, 2017
- Agua Caliente Band of Cahuilla Indians, January 25, 2017
- PGA West management meetings: Spring 2014; Spring 2016; March 24, 2017; and May 24, 2017 (field trip)
- Quarry Golf Club management meeting, November 2016; March 28, 2017; April 28, 2017
- Presentation to American Planning Association, CV Chapter, March 23, 2017
- Multi-agency meeting at CVWD (including CVWD, Reclamation, USFWS, CDFW, CVCC), March 1, 2017

## **4.5 List of Preparers**

### **4.5.1 Bureau of Reclamation**

Julian DeSantiago	Supervisory Environmental Protection Specialist
James Kangas	Archaeologist
Nick Heatwole	Environmental Protection Specialist

### **4.5.2 Bureau of Land Management**

George Kline	Palm Springs-South Coast Field Office Archaeologist
Ashley Adams	National Monument Manager, Santa Rosa and San Jacinto Mountains National Monument, Palm Springs-South Coast Field Office
Danielle Ortiz	Wildlife Biologist, Palm Springs-South Coast Field Office

## 5.0 References Cited

### ORGANIZATIONS, PERSONS AND DOCUMENTS CONSULTED

#### Project Proponent

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